

☼ Despatch Riders at Salonica: Unique Photographs.

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Motor Cycling

VOL. XIV,

TUESDAY, 3RD OCTOBER, 1916.
Registered at the G.P.O. as a Newspaper.

No. 360.

B.S.A.

MOTOR BICYCLES

Great
Australian
Success.

After a fine triple win on a B.S.A. Motor Bicycle in Western Australia, H. V. Norton followed that up by winning the Open Hill Climb of the W.A. Motorcycle Club, also putting up fastest time. Thus in four different consecutive events this rider has won the Track Championship, the Petrol Consumption Test, the Two Days Reliability Trial, and the Hill Climb all on the same B.S.A. machine.

Catalogue free from The BIRMINGHAM SMALL ARMS CO., Ltd., 12, Small Heath, B'ham.

Please mention "Motor Cycling" when corresponding with advertisers.

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Quality & Comfort.
Mills - Fulford, Ltd., Coventry.
The Original Sidecar Makers.

Sidecars

Economy

TWO STROKE IXION

You doubtless know, that "TWO-STROKES"—with their low petrol consumption—ensure greatest Efficiency, Reliability and — ECONOMY.

None more so than the "IXION" Two-Stroke — "The Two-Stroke of the Year"!

The IXION Ladies' & Gent's

Model D (Ladies'), 2½ h.p., 2 str., 2-sp. ... £38 0
Model B (Gents'), 2½ h.p., 2-str., 2-sp. ... £35 10

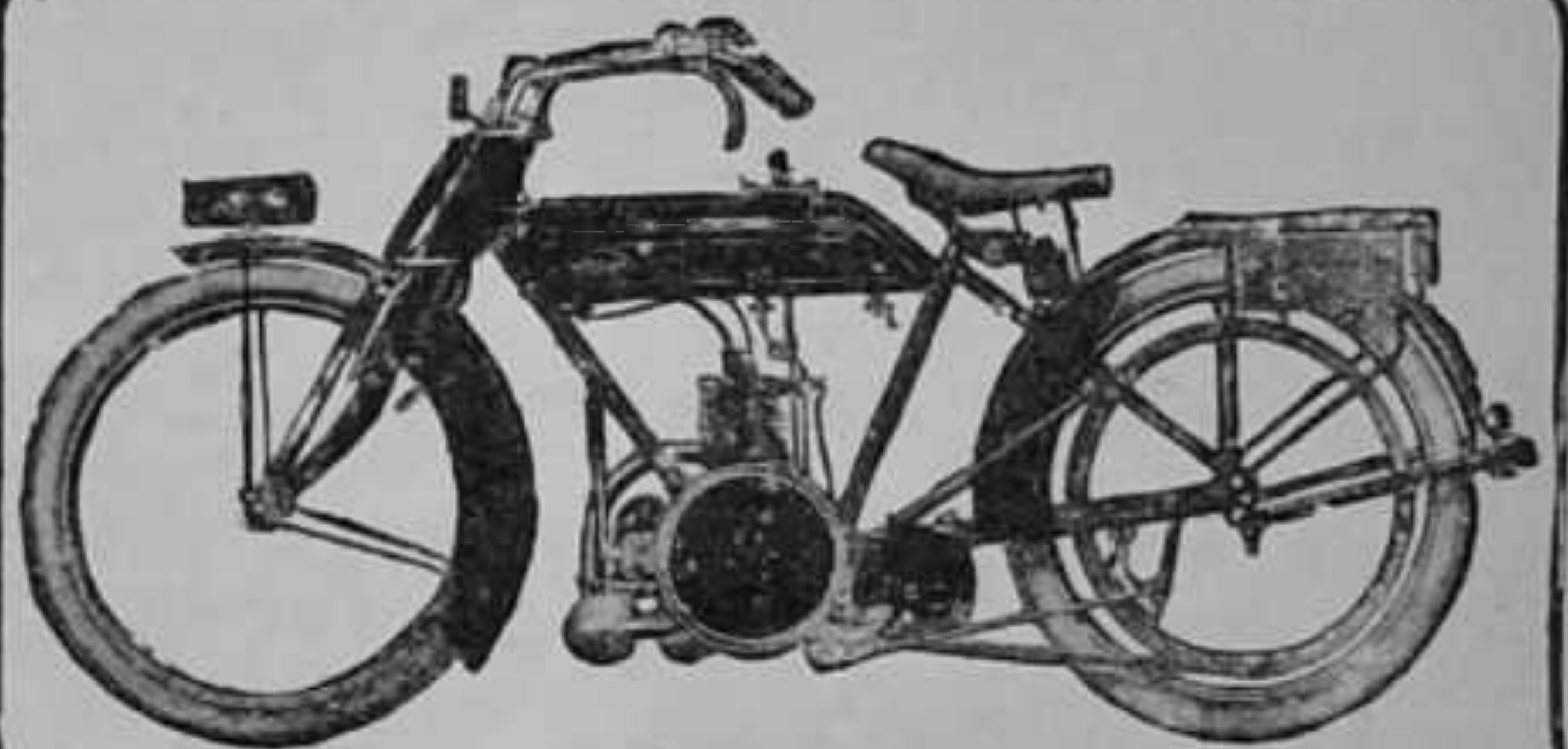
—illustrated— in whatever sphere of service they are being employed — are giving increased proof of their exceptional "saving" in petrol.

The IXION worthily upholds its position of supremacy by its inclusion of every advanced feature in design, ensuring the Highest Economy and Efficiency.

Let us send you "Booklet of the IXION"—describing fully the many advantages of our models.

The IXION MOTOR MFG. Co.
Great Tindal Street, BIRMINGHAM.

Sole London Agent—Wm. Whiteley, Ltd., Queen's Road, W.



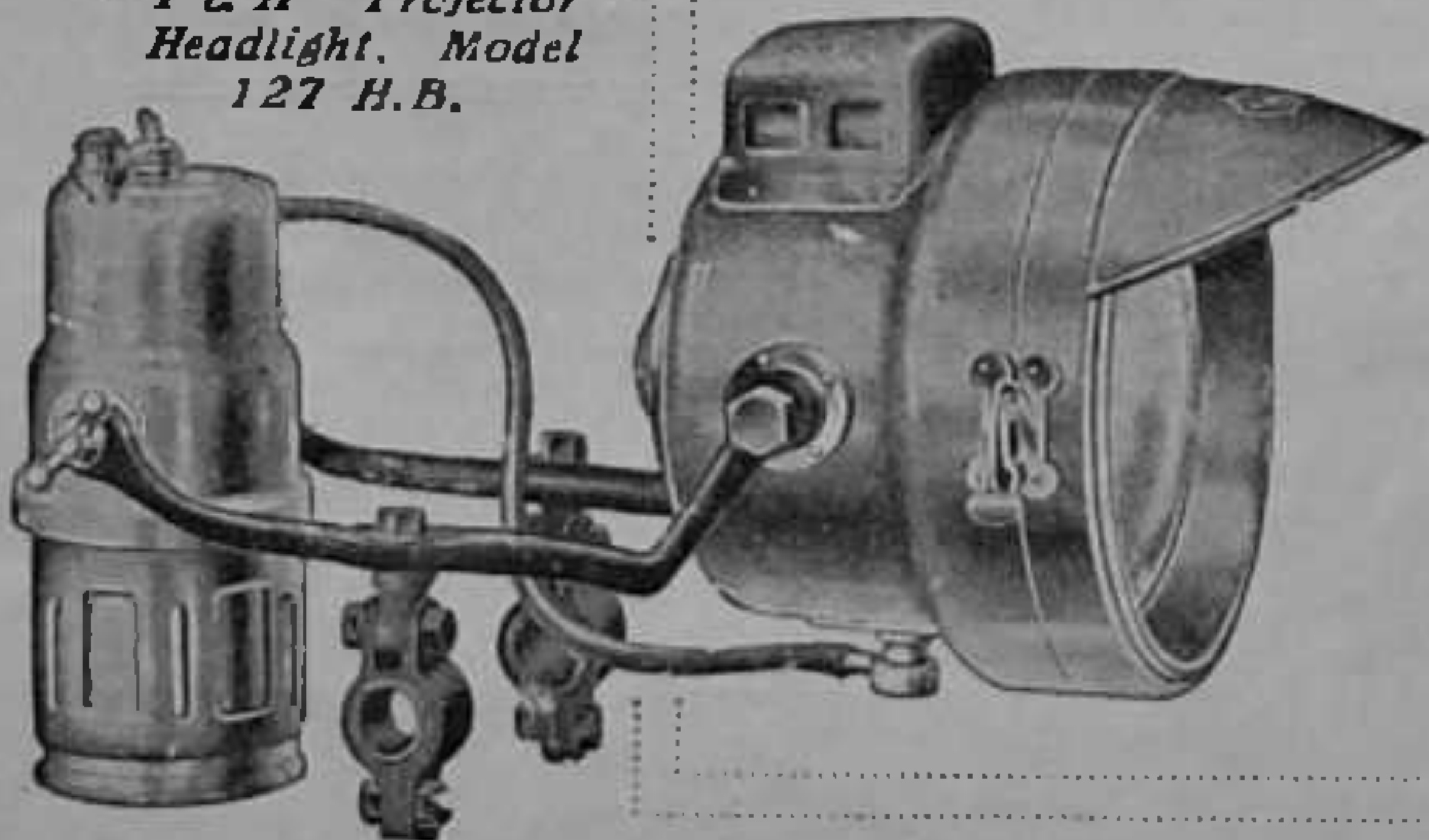
"Ask for
the P & H."

—"the products of
Proved Reliability."

It's Absolutely Necessary

—in view of added darkness and "care-in-lighting"—to safeguard your experiences awheel from any feeling of insecurity, by the equipment of the Lamps to suit—from the "P & H" the RELIABLE Lamps.

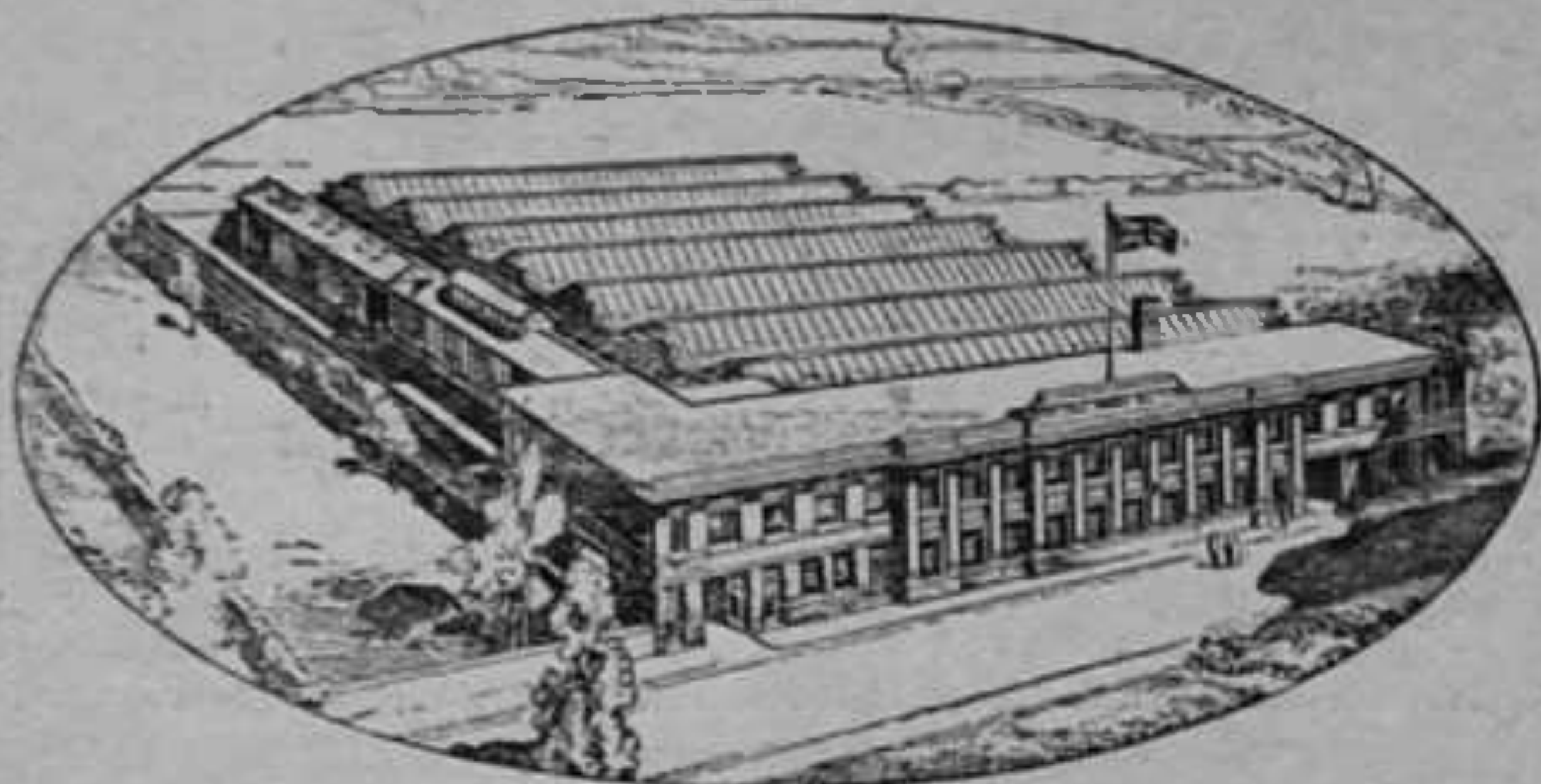
"P & H" Projector
Headlight, Model
127 H.B.



That recognised "P & H" merit of ABSOLUTE RELIABILITY has long since influenced the "Lamp-choice" of riders everywhere, and should determine YOURS now.

Your Agent will show you the Lamp we illustrate or any other from our wide range. Write us to send you fullest particulars.

POWELL & HANMER, Ltd., Chester St., Birmingham



To keep pace with Government orders, more machinery and more workpeople — in fact, larger premises — became essential.

THE NEW LODGE PLUG FACTORY

at Rugby has accordingly been built and is now in full swing. The whole factory is devoted solely to the manufacture of Lodge Plugs. The Birmingham offices have also been transferred to Rugby, so that the establishment is now complete under one roof.

Kindly note new address.

THE LODGE SPARKING PLUG CO., LTD., RUGBY.

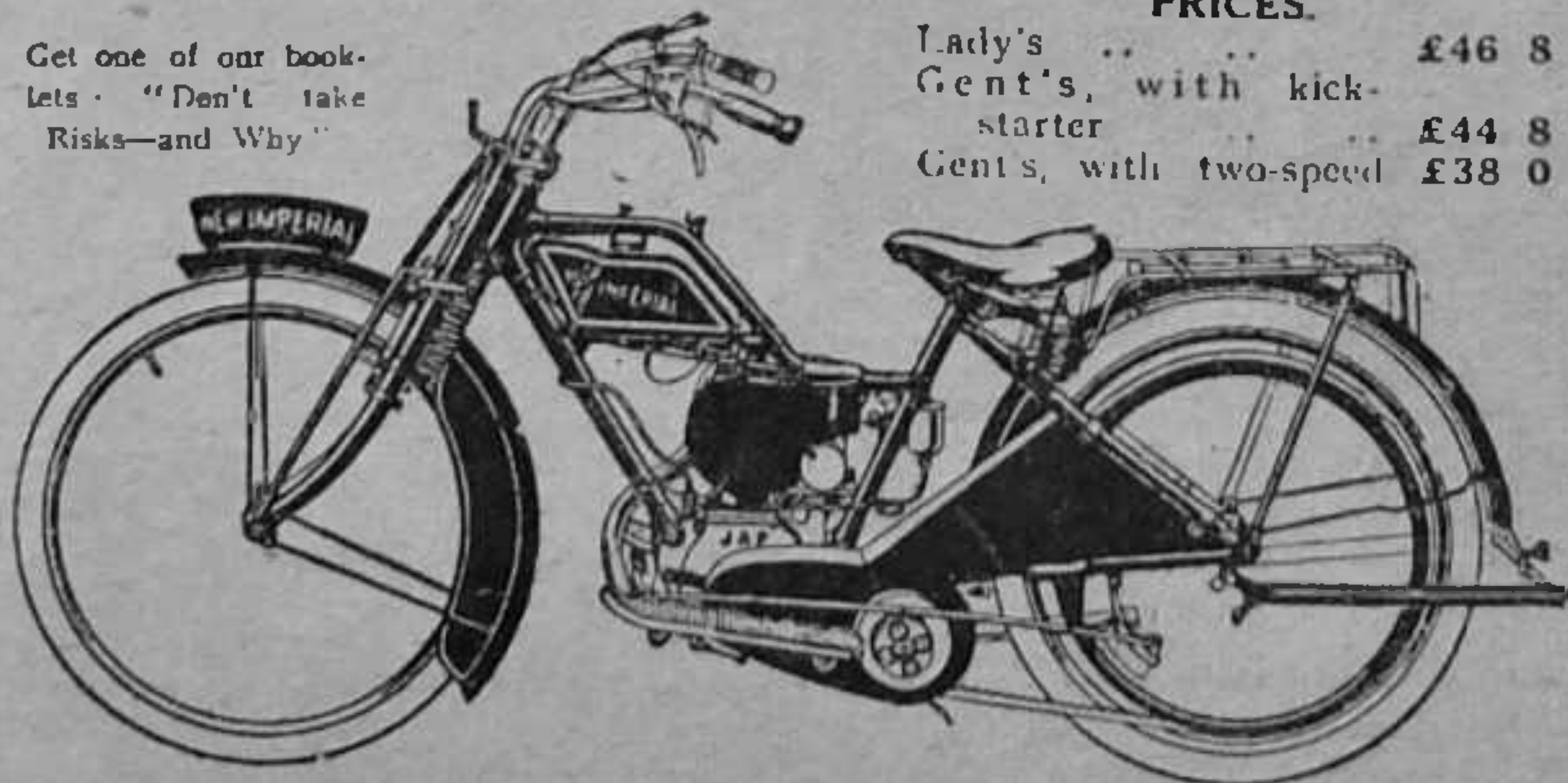
Telegrams—"Igniter, Rugby."

Telephones—Rugby 235.

966

The New Imperial Ladys Model

Get one of our book-lets - "Don't take Risks—and Why"



PRICES.

Lady's ..	£46 8
Gent's, with kick-starter ..	£44 8
Gent's, with two-speed ..	£38 0

—is the sweetest thing in Motor Cycling. Like the famous Gent's "Light Tourist," it is perfectly simple to control, very accessible, extremely economical, and, with its two-speed clutch and kick-starter, is **very easy to start**. A little child can actuate the kick-starter. These excellent qualities, combined with the perfect dependability for which it is famed, make it the **ideal** motor cycle for ladies. If you wish it, you need not be "left" by any other.

Sole Makers:

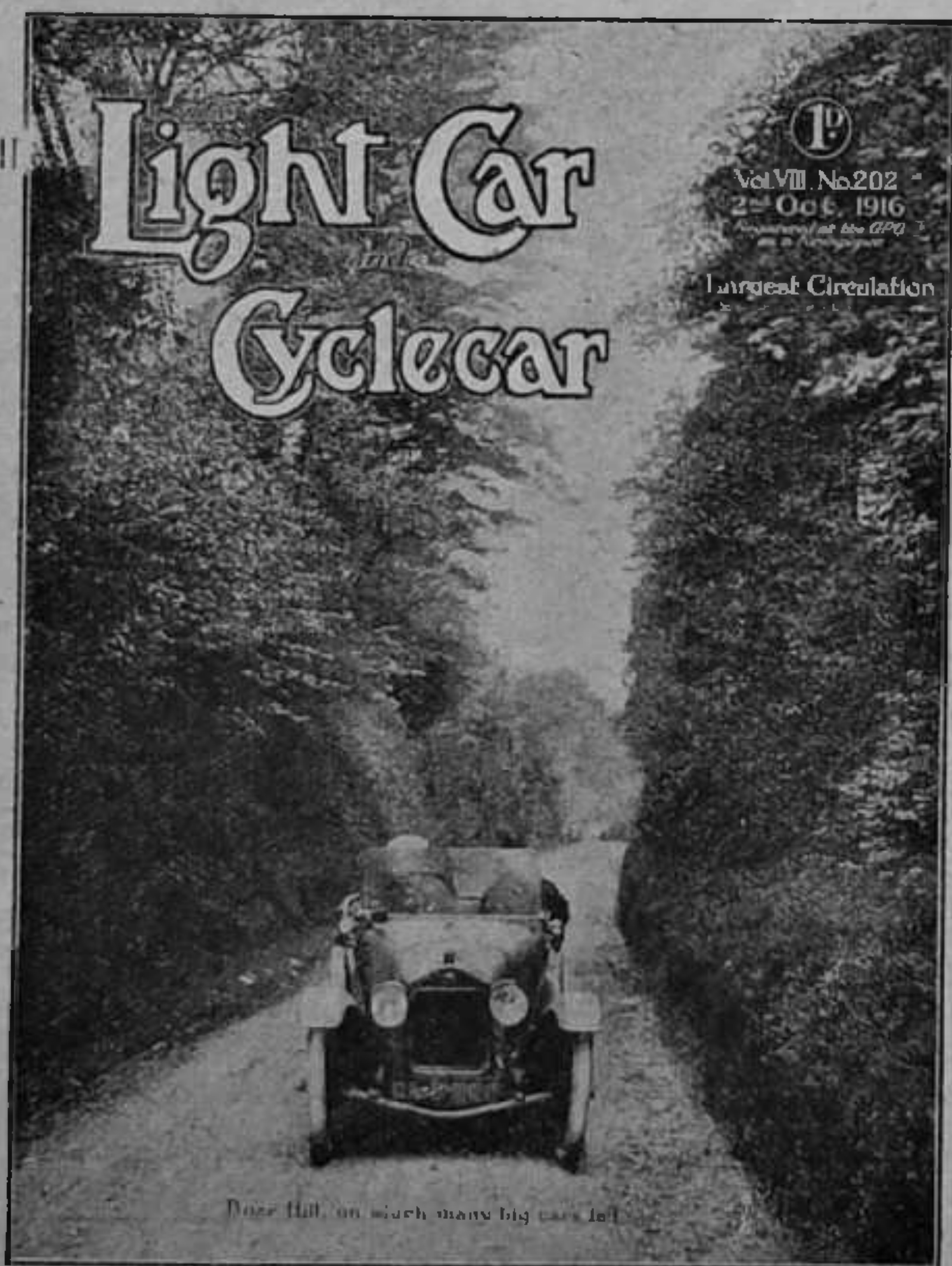
**NEW IMPERIAL CYCLES, Ltd.,
BIRMINGHAM.**

OUR Works are entirely engaged upon important War work; consequently we regret we are unable, for the time being, to give delivery of motor-bicycles. Our stock of spares is limited, but we shall do all in our power to give immediate delivery of same where possible.

Under the present difficult circumstances we ask the indulgence of our customers, and very much regret the impossibility to give the attention to their requirements we would wish.

We are receiving numerous enquiries for the "Scott" Motor-bicycle and are booking orders, which we shall take in strict rotation as to delivery on the return to normal times.

The SCOTT ENGINEERING Co., Ltd.
=====SALTAIRE, SHIPLEY, YORKS.=====



Reduced Facsimile of Cover.

**THIS WEEK'S ISSUE
 :: NOW ON SALE. ::**

Remember this is MONDAY'S journal, with full-page picture cover. **1d.**

Principal Articles this week:

HOW TO DRIVE A LIGHT CAR OR A CYCLECAR.

A new special regular feature.—Part I. deals with: "An Explanation of First Principles." There has long been a call for a thorough exposition of the art of driving for users of light cars and cyclecars. This new series deals not only with the proper manner of handling a car, but many points that call for good judgment in difficult situations, with simple diagrams showing what to do to place the car on any desired course.

This New Series is profusely illustrated.

THE 1917 MORGAN CYCLECAR.

First illustrated description of next year's greatly improved model with 10 h.p. air-cooled M.A.G. engine and streamline body.

And many other features of absorbing interest.

24 Pages.——One Penny.

The Bradbury

A Striking Tribute from a Soldier

*A Private in the M.T., A.S.C., writing
from France, 21st June, 1916, says:—*

Dear Sirs,

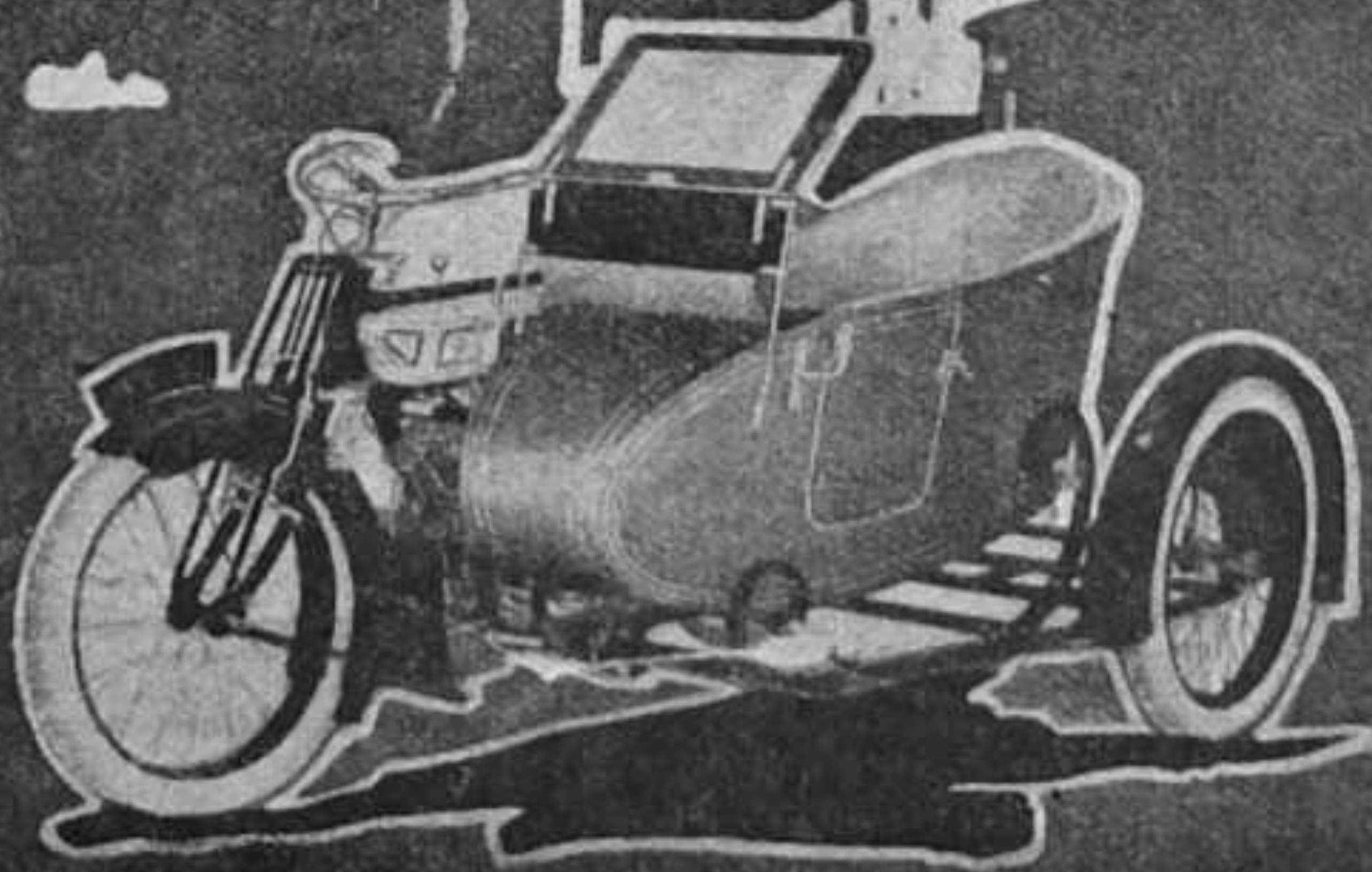
I feel I must write a few lines to you concerning my 1911 Bradbury Motorcycle, 4 h.p. I have just returned from leave in England, and, having been away just 12 months, thought my cycle would want a good overhaul before using, but nothing of the kind; I splashed the oil about a little, filled up with petrol, and away she went. I have a sidecar attached and have had over 30 stone on board; she sails away splendidly, very rarely using my second gear.

She has still the old B. & B. Carburetter and all fittings just as she was turned out of the works, bar the two-speed gear.

You are at liberty to use this if you wish, as the Bradbury is well worth trying and greatly in advance of machines of much later date that I have seen and ridden out here.



THE
BRADBURY
THE 'ALWAYS
READY' MACHINE





It's

RELIABILITY

that counts.

PERFECT and unfailing reliability under adverse weather conditions, over rough tracks and uneven road surface, even on desert sand—such is the reliability of the TRUSTY TRIUMPH, a fact fully appreciated by the British War Office, and the War Offices of our Allies.

TRIUMPH CYCLE CO., LTD., COVENTRY

TRIUMPH



FOUNDED 1902.
NEW SERIES BEGUN 1909.

Conducted by
EDMUND DANGERFIELD
Conductor of 'THE MOTOR:
"CYCLING," etc.).

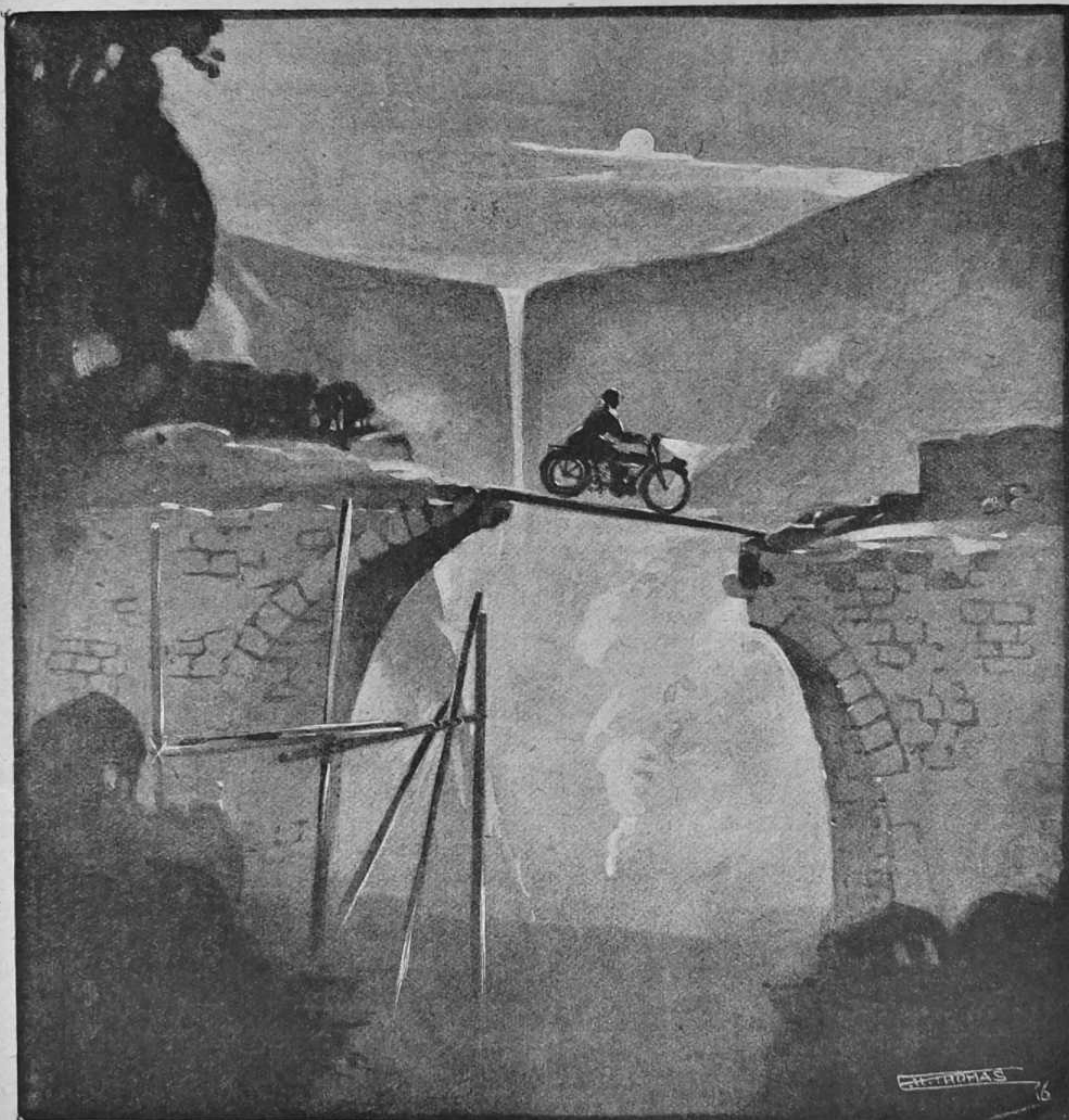
MotorCycling

A Newspaper for Motorcyclists only

Edited, Written, and Illustrated
by

A STAFF OF
PRACTICAL
MOTORCYCLISTS.

Offices: 7-15, ROSEBURY
AVENUE, LONDON, E.C.



A DRURY LANE SENSATION.

In the drama "The Best of Luck" at the famous London theatre, Drury Lane, a thrilling motor-cycling incident is included, amidst many other startling events. The heroine, Miss Madge Titheradge, clad in becoming leather overalls and mounted on a T.T. Rudge, dashes across a plank spanning the arches of a bridge under repair. The villain, driving a racing car, dashes after her, only to crash into the "depths beneath."

EDITORIAL

The Elimination of the German Magneto—More Petrol In November— Relief of the Petrol Restrictions.

Our Anti-German Magneto Campaign.

ON the first page of correspondence that appears in this issue will be found an extremely interesting letter from the Electrical Ignition Co., Ltd. In this the difficulties which the British manufacturer of magnetos has had to overcome are very clearly dealt with. We appreciate and have appreciated these difficulties, but we certainly do not think that they have been put forward in such a concise and clear manner as in this instructive contribution from the E.I.C. Co. We are extremely glad that attention is being riveted upon this extremely important subject, and we congratulate Messrs. Veloce on their statement that so far as they are concerned no magneto other than a British one will ever be found on their machines. We again reiterate the necessity of a frank statement by the British motorcycle manufacturer to the effect that British magnetos only will find a place on their machines after the war. It may be argued that such a statement is not necessary, but we contend that it is, for undoubtedly the German magneto manufacturer has had an enormous lead over all other manufacturers in the world in the production of that extremely important unit of motorcycle construction. If a statement were made the magneto manufacturers would realize that they had a definite market to rely upon, for not only, it must be remembered, is competition against German magnetos from Germany to be considered, *but also competition from German magnetos sent into this country by German concerns trading in countries which were neutral during the war.* Here, indeed, is the crux of the whole matter, and it is against similar competition that the great Allied Economical Conference held in Paris and similar conferences held elsewhere have been aimed. Under these circumstances, therefore, we feel justified in pursuing this matter to a definite issue.

More Petrol At Last.

WE are extremely glad to be able to make the statement that, as prophesied in our associated journal, "The Motor," and in this journal, that there will be a definite increase in the allotments made to motorcyclists and motorists when the August, September and October allotments have expired. We and our readers have been well aware that there are actually in the country ample stocks of petrol. Indeed, many garage proprietors have become seriously over-stocked, and, as we have stated, have in several cases supplied business motorcyclists with fuel in excess of that quantity which they were permitted to buy by their petrol permit. Some little while ago an allied association, consisting of representatives of the principal motor-ing control bodies was formed, and, in view of the

surplus of petrol available, made strong representations to the Petrol Control Committee for the abolition of the petrol permit scheme on and after the 1st November next, or, failing this, a 50 per cent. increase on the present allocations. The Petrol Control Committee received these representations in a favourable manner, and although they cannot see their way clear to bind themselves down to a definite statement it is clearly indicated that after 1st November greatly increased allocations of petrol will be provided. We are glad that the optimistic note which was struck solely by our associated journal "The Motor" and by MOTOR CYCLING in the face of considerable opposition elsewhere has been fully justified. With some of the really excellent petrol substitutes or petrol dilutants that are now being gradually weeded out from the ruck of substitutes, and with an increased allotment of petrol, there need be no fear whatsoever of a decrease in motor cycling. The news will come as a welcome relief, both to the private owner and to the trade.

The Necessity of Two Brakes.

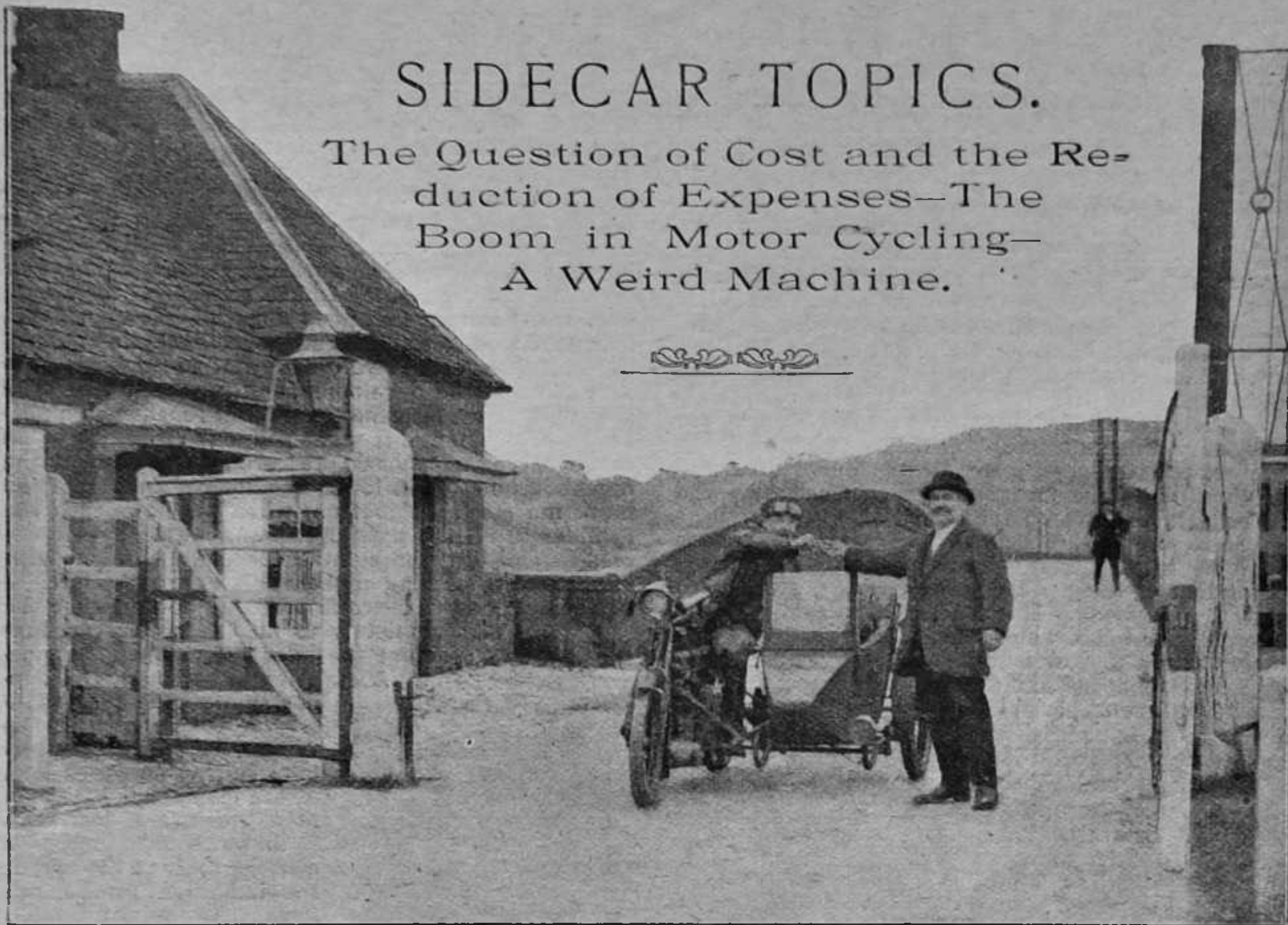
WE have received an intimation that the police are about to conduct a campaign against motorcyclists whose machines are only equipped with one effective brake. We have in the past insisted upon the necessity of machines being equipped with two brakes not only to conform with the law but for the sake of the driver's safety and other users of the road. Unfortunately the front rim brake has fallen into disrepute, and in many cases readers disregard this brake altogether. When, however, a certain amount of care is taken in seeing that it functions properly, the front rim brake can be made extremely effective. In many instances, however, the material with which the brake blocks are constructed is unsuitable, and it is advisable in these cases to obtain a material slightly softer than that of which many of the blocks are composed. Apparently the instructions for the proposed prosecutions emanate from Scotland Yard, so it is very reasonable to suggest that, unless motorcyclists follow our advice, these will become broadcast.

A Novel Competition.

ELSEWHERE in this issue we publish details of an interesting competition which we feel sure will make a great appeal to every one of our readers. A keen motorcyclist, no matter what machine he may ride, takes a pride in being aware of the details of every type of machine. In this competition our readers' knowledge (which in the case of the winner will be awarded by the presentation of a pair of motorcycle covers complete with tubes) will be tested to the fullest possible degree.

SIDECAR TOPICS.

The Question of Cost and the Reduction of Expenses—The Boom in Motor Cycling—A Weird Machine.



Paying toll at one of the few toll-gates in existence—Stornford Bridge, between Oxford and Witney

ON the road the other day I met two old friends who were having a Saturday afternoon run on a first-class 8 h.p. sidecar outfit. I stopped for a chat, and, naturally, discussed the question that is uppermost in all our minds just now—that of cost. To my surprise, they were quite cheery about everything, and said that they paid only ninepence a gallon for their fuel. This sounded so amazing, that I am afraid I showed that I suspected them of trying to elongate one of my limbs. They laughed, and then explained the mystery.

It was slowly made clear to me that they owned the sidecar machine in partnership, and shared all expenses. They used a mixture of paraffin and petrol, which cost them 1s. 6d. a gallon, or 9d. each, and all their other disbursements were halved. Consequently, they were able to say truthfully that sidecarring for them was by far the cheapest recreation possible. They found no difficulty in obtaining the necessary amount of petrol, as they both held "licences to purchase motor spirit," and were allowed two gallons each. The four gallons they could buy in partnership was sufficient for their need when diluted with paraffin, and therefore they had every reason to be content.

I have often wondered that more motorcyclists do not adopt this sensible method of reducing their expenses. Of course, it only appeals to single men or those married ones whose wives do not care for sidecarring—if there be ladies of such perverted tastes. Many men who would in the ordinary course buy solo machines could find friends who would be pleased to "go halves" in a sidecar outfit, which, after all, does not cost very much more to run than the solo, and then they would find all their expenses, from the initial

cost to garage fees, very low. The only objection would be the difficulty of arranging matters when partners wanted to take out lady friends on the same Saturday or Sunday afternoon. It would be hardly practicable to fit two flapper brackets, so it would be advisable for them to avoid falling in love simultaneously.

Seriously, however, the scheme of dual ownership has very great advantages, and it might well be considered in these hard times.

I speak of "hard times" because it has become the custom to do so, but to a very large section of the community the war has brought such prosperity as was never known before. Many hundreds of young men who have deservedly won commissions in the Navy and Army, and those who have gained their wings in the Air Services find themselves quite well off, especially when on active service. I have known many of them who the moment they have arrived in London for a few days leave have gone straight to Great Portland Street or Holborn Viaduct and have purchased a car or motorcycle just for use during the holiday.

In the Midlands there are tens of thousands of munition workers, men and women, who are making more money than they ever dreamed of before. Only a few days ago I was talking to a man in Birmingham, the owner of a very smart 6 h.p. turn-out. He told me that with good wages and overtime, his wife, daughter, and himself, all in the same factory, were earning quite four times more than the family income before the war, and that they had bought the sidecar outfit out of a few weeks savings.

Sidecar Topics (contd.).

In the chief munition districts it is astonishing to see what a number of men dash away on motorcycles at the dinner-hour, and very few of them are mounted on old crocks. Many of the machines are this year's models. In one town I saw three girl munition workers ride up to the works on motorcyclettes—all men's machines. Some of these damsels, who contrive to look astonishingly attractive in blue overalls and caps when at work, earn as much as £3 or £3 10s. a week, which is perhaps three times as much as they earned in pre-war days. Consequently, they can afford luxuries. I have seen thousands of them at work in factories formerly devoted to the building of motorcycles, and the way they handle intricate machinery is astonishing to anyone who has been apt to think that a woman is incapable of managing anything more complicated than a sewing machine. After the war there will be many good women mechanics who will be able to tune up their motorcycles as well as any man. In fact, I believe that masculine riders will have to look very strenuously to their motorcycling laurels when peace opens up the pastime once again to everybody. It has often been said that the more delicate touch which women possess enables them to get fractional improvements in speed and sweet running which are impossible to the rougher masculine handling of controls. As to pluck and endurance, I think some of those same attractive damsels, hardened by months of continuous hard work, will not be far behind the mere man in these qualities when hill-climbs and trials require them of us once more. In appearance the ladies are already miles ahead of masculine motorcyclists, as I have often regretted in these pages, and they are as keen as mustard.

I came across a most fearsome-looking machine recently. At first I thought it must be the latest war machine—something in the nature of a sidecar Dreadnought, Snark, or Jabberwock. Closer inspection, however, assured me that it was not armoured, but merely fitted with a vast hood, which covered the entire motorcycle, besides offering complete protection to the sidecar passenger. The waterproof cloth was stretched over a home-made frame, which was most ingeniously constructed in such a manner that when it collapsed, which appeared to happen frequently, the iron struts hit the driver only on the softer portions of his anatomy and did not inflict fatal injuries.

I inquired of the driver, whose machine was only of 3½ h.p., what happened when he had to ride against a head wind with all that canvas up. He was a simple little soul, without a spark of humour, and he told me quite seriously that he never tried to go against the wind, but always went the other way, so as to have it behind him. He said that under favourable circumstances, with a fair wind, he could practically sail along without the help of the engine. I suggested that he should rig up a balloon jib, spinnaker, and top sails.

so as to be able to abandon the engine altogether. Considering the difficulty of obtaining petrol at present, I argued that this would be a great saving. He listened quite gravely, and seemed to consider the proposition seriously until he realized that I was chaffing him. Then he went off in a huff with all his canvases fluttering in the breeze. There are strange people in the world!

While writing recently of the changes that may be brought about in all engines by the development of the aeroplane, I ought to have mentioned forced induction. So far, the need for this has not been brought home to the designers of motorcycle engines, but it has been made very apparent to those who are interested in the development of aero engines. The reason is that it loses power when it reaches high altitudes. A moment's thought will make this clear. At sea level the atmospheric pressure is somewhere in the neighbourhood of 15 lb. to the square inch. On the induction stroke, therefore, when air flows into the cylinder to fill the partial vacuum caused by the descending piston, the cylinder becomes charged with mixture at something slightly below that pressure. I say below because there is probably not time for the air completely to fill the partial vacuum before the inlet valve closes, supposing the engine to be cold. But sup-

posing we take that same engine to an altitude at which the atmosphere is only half as heavy as it is at sea level, that is to say, at a pressure of less than 7½ lb. per square inch, it is obvious that, at the end of the induction stroke, we have a mixture at, roughly, that pressure in our cylinder, and, therefore, the compression immediately before firing is only half what it would be at sea level. Obviously, we have the resultant loss of power that we experience when we find the compressed gases are leaking away past faulty piston rings or exhaust valves.

It is clear that there is no possible way of keeping up the power of an engine at high altitudes except by resorting to forced induction, and when this is done one hesitates even to guess at the speeds aeroplanes may attain. I imagine 500 m.p.h. might be possible. The point that interests us chiefly is what effect the experiments that are being made may have on the future motorcycle engine.

THE GIPSY.

Severe Australian Trial.

So many competitors secured equal marks in a 24 hours road test conducted by a Victorian Motorcycle Club that a supplementary contest became necessary to find a winner. This run was from Melbourne to Winchelsea, a distance of 150 miles. Stringent conditions were enforced, and the slightest deviation or error of judgment in keeping to time schedules along the route meant loss of points. Secret controls were arranged, competitors being thus unable to slow up, or increase their pace to fit in with their speed averages. The winner of the cup, presented by an Australian paper, proved to be C. S. Teece, on a J.A.P. sidecar equipped with Dunlop tyres.



Not to be confused with Rosebery Avenue! Rosebery Toppin, the 1057-ft.-high landmark in the Middlesbrough district.

CROSS-COUNTRY COMMENTS.

A Diary of the Open Road.

I HAVE just left one of our busiest training centres, where, for a few hours, I was given the freedom of the camp, permitted to wander here, there, and everywhere, unquestioned and unchallenged.

I roamed amongst men of Anzac lands, and the men of Homelands, amongst the products of our huge Islands Arsenal and from under the Star Spangled banner. I talked of war and war work as I watched an army in the making, and I was astounded—astonished that all this could have been created since I last gazed on this same scene. Yet only two years have passed since that small nucleus was formed, then, a mere handful of men and machines: To-day, a veritable mound of industry, and, like the insect ant dwellers of such mounds, when bestirred by some inquisitive wayfarer, their activity held one almost spellbound. They darted here and darted there—the dust-masked determined despatch rider, confidently dodging in and out those lines of three-tonners which unmercifully bumped and rocked from side to side of what was, one time, a road, churning great clouds of dust, which marked their trail like a huge serpent fading in the distance. Could all this be true? Was it real? Had I not stood on this very spot at the outbreak of hostilities and delivered one hundred or more machines to as many men, who, with about six or seven exceptions, had never previously sat a saddle nor felt a pair of rests under their insteps?

To deliver meant also to teach, and what a wicked muddle I then thought it all! And from that all this order and discipline, and the finest corps of riders in the world—a corps that in their playful frolic execute such riding feats as our pre-war expert would shrink from even attempting for gain. Their metal mounts seem almost human in the way they answer every little movement of the hands or body of their master.

Manufacturers' Models.

I HAVE been in the habit of diligently perusing the advertisement columns lately, mainly in the endeavour to obtain a model, the product of a manufacturer whose productions, unfortunately for us, are very popular with the authorities. After the general letterpress has been devoured, the "For Sale, Hire and Exchange" columns will be found a most interesting diversion, if digested systematically. To trace the bargains—to weed out the clever letterpress

of the skilful trader from the amateur advertisers—are quite simple propositions when compared to the task of classifying each year's models of the now innumerable manufacturers. Time was once when I had memorized the name of every machine manufactured, as well as each year's improvements, and could tell the name and model of a machine from the most vague description.

The mushroom-like growth, but not life, of industry of late years, however, has made this almost a physical impossibility. The only people who can now keep fairly well informed on these matters are the dealers, and they admit their knowledge is limited. How often do we find a 1914 3½ h.p. advertised as a 1914 4 h.p.? Knowingly or unknowingly, it is difficult to say, but we are privileged to draw our own conclusion from the fact that this little discrepancy greatly increases the market value from the advertiser's point of view, because in the cases to which I refer the 3½ h.p. models are obsolete. In another case, I noticed a 4 h.p. two-speed advertised as a sacrifice, and at a price which, to the casual observer, would appear exceedingly reasonable. The little knowledge that I fortunately possess of these matters enabled me quickly to discern the cloak that veiled another 3½ h.p. model, as the manufacturers of this particular machine fitted only three-speed gears to their larger engines.

Now, I do not wish my readers for one moment to think that this is the method of the genuine trader; far from it, in fact, for these people have businesses and reputations that must be religiously guarded, and are, therefore, concerns from whom the inexperienced will be most likely to obtain a bargain. And a trader also knows that many days will not pass before the man with whom he may have completed a doubtful deal will with certainty return for recompense. We want to be guarded from the cannot-be-found advertiser, and this could be done by

every manufacturer placing, say, a six-line advertisement at the head of the column in which his second-hand machines appear. Embodied in this advertisement would be each year's numbers, a brief specification, etc., e.g.: "Motors, Ltd.," engine numbers 6000 to 9000 are 1912, two-speed 3½ h.p. models; engine numbers 9001 to 12,000 are 1913 countershaft 4 h.p.; engine numbers 12,001 to 15,000 are 1914 chain drive 4 h.p. twin," or as the case may be. I think the manufacturers who grant us this small consideration



The Baroness de T. Serclaes (right) and Miss M. Chisholm on their 4 h.p. and 2½ h.p. Douglases. They are stationed at the Belgians' first line Red Cross Depot.

Cross-country Comments (contd.).

will receive the thanks of a whole crowd of patrons, who are, under the present conditions, compelled to purchase the more popular makes in the second-hand markets, the new machine being absolutely unobtainable.

PAST experience has taught me to evade, whenever possible, the week end pedestrian traffic of our provincial cities. Sometimes this necessitates a detour of five or six miles, but the convenience and comfort gained make the additional mileage well worth while. Unfortunately, on a recent Saturday, I was compelled to visit the business part of a fairly large provincial city. The manner in which the populace deliberately paraded and obstructed the roadway, defying with delight all other road users, but particularly motorists, made me inwardly wish to be at the wheel of a "tank" in that main thoroughfare for just about five minutes.

These selfish people laughingly loiter almost at your front wheel, and they are evidently direct

descendants of, or at least like, the people of that gorge village—Cheddar, who, in estimating the age of a treasured skull found in the bowels of the earth, impress upon one that they are obviously not in the least particular to a minute or two, for they calmly claim, with conviction, that the skull is from 40,000 to 80,000 years old!

What, then, would be to their small minds the exact duration of that microscopical portion of time—five minutes—that they keep the impatient motorists waiting, while the little group of giggling gapers saunter apart? Surely something can be done to remedy this state of affairs. The authorities responsible for the traffic regulations would confer a blessing on all motorists if they would only give us a by-law similar to that in force in the city of Sydney, that is:—"Every person upon a carriage way or public street shall take due precaution to avoid a collision with any vehicle or horse upon such streets." It is also provided that "Any person committing a breach of this regulation shall be liable to a penalty not exceeding £10." What a source of revenue, then, have we here, especially if our men in blue tapped it as ruthlessly as the speed limit source? COOEE.

A NOVEL AUTOMATIC OILING DEVICE.

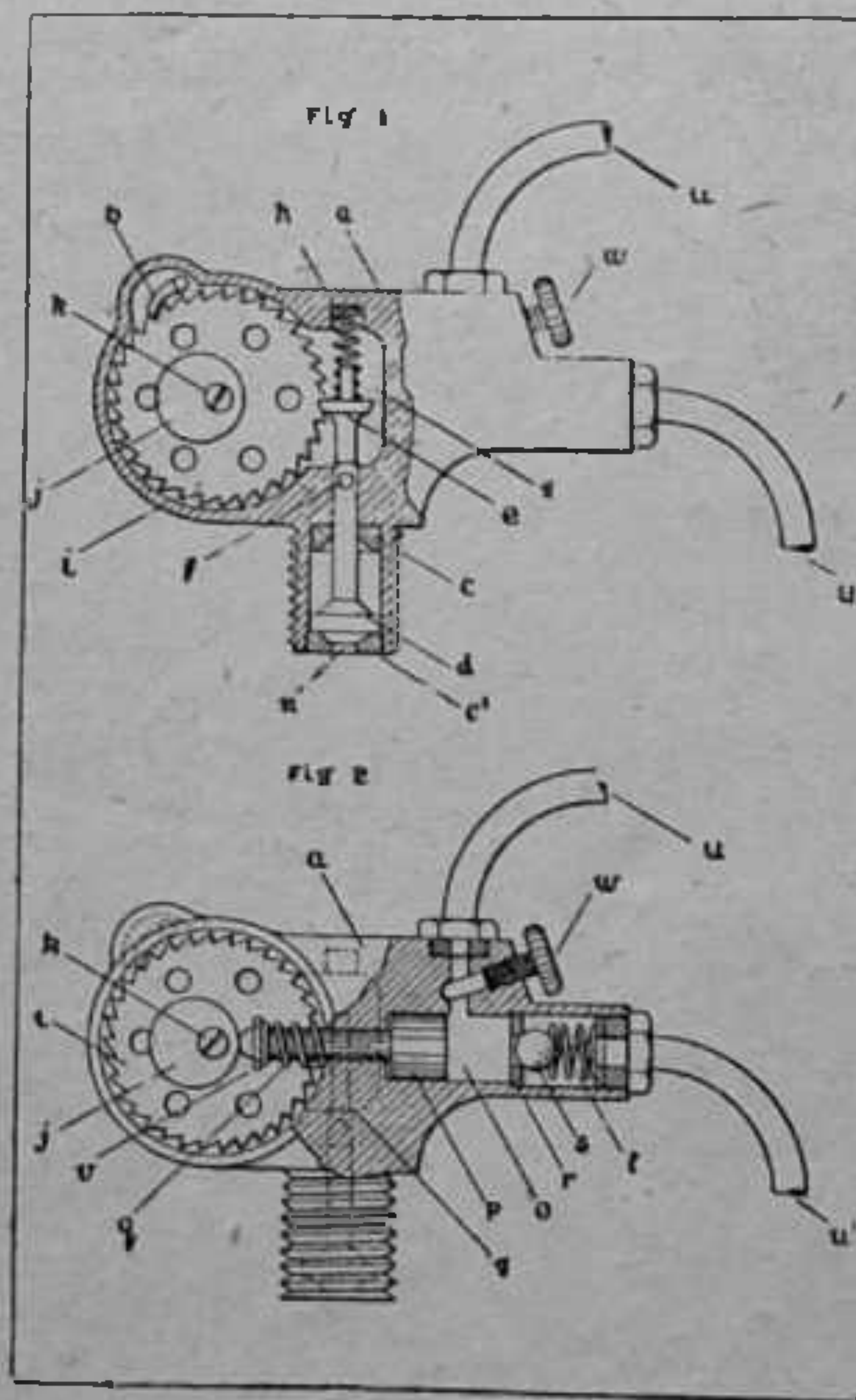
Compression in the Cylinder Utilized to Operate the Mechanism.

A VERY clever and original automatic oil pump was recently brought to our notice by the patentee, Mr. D. McGregor, of 49, Sampson Road, Sparkbrook, Birmingham. The appliance occupies a rather unusual position on the engine, being fitted into the head of the cylinder, where it is operated by the pressure of gas formed there. The device consists of a valvate piston or pulsion rod, the valve having a double seating, operating within a hollow cylindrical extension at the base of the pump casing. The exterior of this extension is threaded to screw into the cylinder head, either into the compression tap or other convenient place. The double-seated valve provides a means whereby a ratchet wheel is intermittently rotated on each up stroke of the engine piston.

By means of a cam fixed to the ratchet wheel, motion is imparted to a reciprocating plunger working in a barrel formed with the pump casing. As this is moved in and out, oil is drawn in from the oil compartment, and delivered to the engine via a non-return valve. The reciprocating plunger is returned to its normal position after each up stroke, by an intermediate spring. At the top of the piston rod of the valvate piston a pivoted pawl is fixed, which engages with the teeth of the ratchet wheel every time it is forced up by the engine pressure. In this position the upper conical portion of the valve is brought to bear against its corresponding upper seating, so that it is impossible for any gas in the engine cylinder to escape. When the valvate piston is returned to the lower seating it would be possible for the ratchet wheel to run backwards, but this is prevented by means of a detent, which detains or holds the

ratchet wheel whilst the pawl is inoperative. This return stroke is accomplished by a compression spring placed immediately above the head of the pawl, and with the valvate piston on its lower seating it is impossible for air to be drawn into the engine on its downward stroke. The lower seat is adjustable, so that it can be raised or lowered to vary the stroke of the piston. A summary of the working principle is as follows. With the engine piston on each up stroke, pressure is exerted against the valvate piston, which is forced off its seating upwards, and by means of the pawl fixed to it, partly rotates the ratchet wheel. This operation is repeated in relation to the speed of the engine, and upon each complete revolution of the ratchet wheel, the cam is brought into action and operates the reciprocating plunger, so that the oil drawn into the barrel on the suction stroke of the plunger is forced through the non-return valve into the engine and working parts. There is no doubt that a lubricator constructed on these lines should give a determined supply of oil at all speeds and loads of the engine, for the supply is regulated by the needs of the engine, and worked by its own power.

A regulator screw is provided to control the flow from the supply pipe.



(A) Body of oil pump. (B) Detent. (C) Upper seating. (C1) Lower seating. (D) Valvate piston. (E) Pawl. (F) Pivotal fixing of pawl. (G) Barrel in which pawl operates. (H) Pawl return spring. (I) Ratchet wheel. (J) Cam. (K) Ratchet wheel fixing to case. (N) Aperture through seating allowing pressure to reach valvate piston. (O) Pump barrel. (P) Plunger. (Q) Plunger return spring. (R) Disc communicating with non-return valve. (S) Ball valve. (T) Spring for same. (U) Oil supply pipe. (U1) Oil delivery pipe. (V) Plunger shaft. (W) Regulating screw.

Motorcyclists at The Hut, Wisley, the other Sunday, witnessed a magnificent flight on one of the new Army biplanes which came from Brooklands and circled round the hotel. It went away for a few minutes, and then, with a deafening roar from the engine, came over the trees and dived towards the road, and sharply ascended again over the lake. It was an awe-inspiring spectacle.



PERMANENT NON-SKID EFFICIENCY.

A point of advantage in the Dunlop non-skid motor cycle cover lies in the fact that when the main studs wear to the level of the main rib, they still have non-skidding properties, because they are not central on the rim but project for half their diameter outside the rib. No. 1 stud, for example, projects on the right hand side of the rib and No. 2 on the left hand side and so on alternately, while the subsidiary studs remain equally operative during the life of the cover.

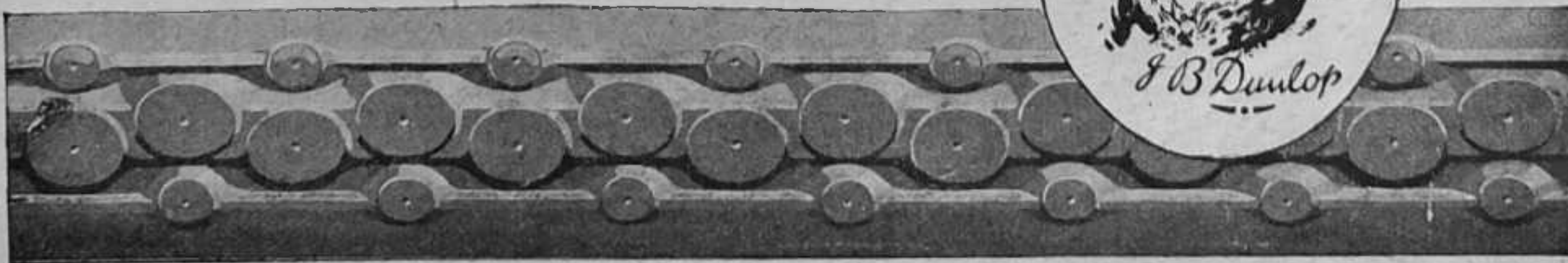
We would point out that a small pattern non-skid with twice as many studs as the Dunlop is not nearly so effective. Many people have attempted to copy our design, but are unable to do so owing to its being patented.

DUNLOP
RUBBER COMPANY, LIMITED,
 Founders of the Pneumatic Tyre Industry,
 Para Mills, Aston Cross, BIRMINGHAM.
 OF ALL CYCLE & MOTOR CYCLE AGENTS.

TRADE



MARK.



The Dunlop rubber-studded non-skid motorcycle tread.



The Mastery of the AIR and how the KEMPSHALL has attained it

Nothing is more irritating than to be perpetually trying to stop air leakage. KEMPSHALLS have mastered this air difficulty by the production of a tube of exceptional quality and by instituting the Famous Interlocked process for covers. No continual pumping—no irritating puncture delays with Kempshalls—the best of British tyres.

THE KEMPSHALL TYRE CO. (of Europe), LIMITED, 97-98, Long Acre, W.C.
 Telephone - 24 Gerrard (2 lines).
Cambridge Street Rubber Works, Manchester; also at 200, Deansgate, Manchester.
 Telegrams - "Studless, London."

Coventry - G. R. Bromley, Warwick Chambers, Warwick Row. Birmingham - Reginald G. Priest, 71, Lionel Street. New Zealand -
 Goldingham & Beckett, Ltd., Palmerston, N. Scotland - Percival E. Polo, 27, Jamaica Street, Glasgow.

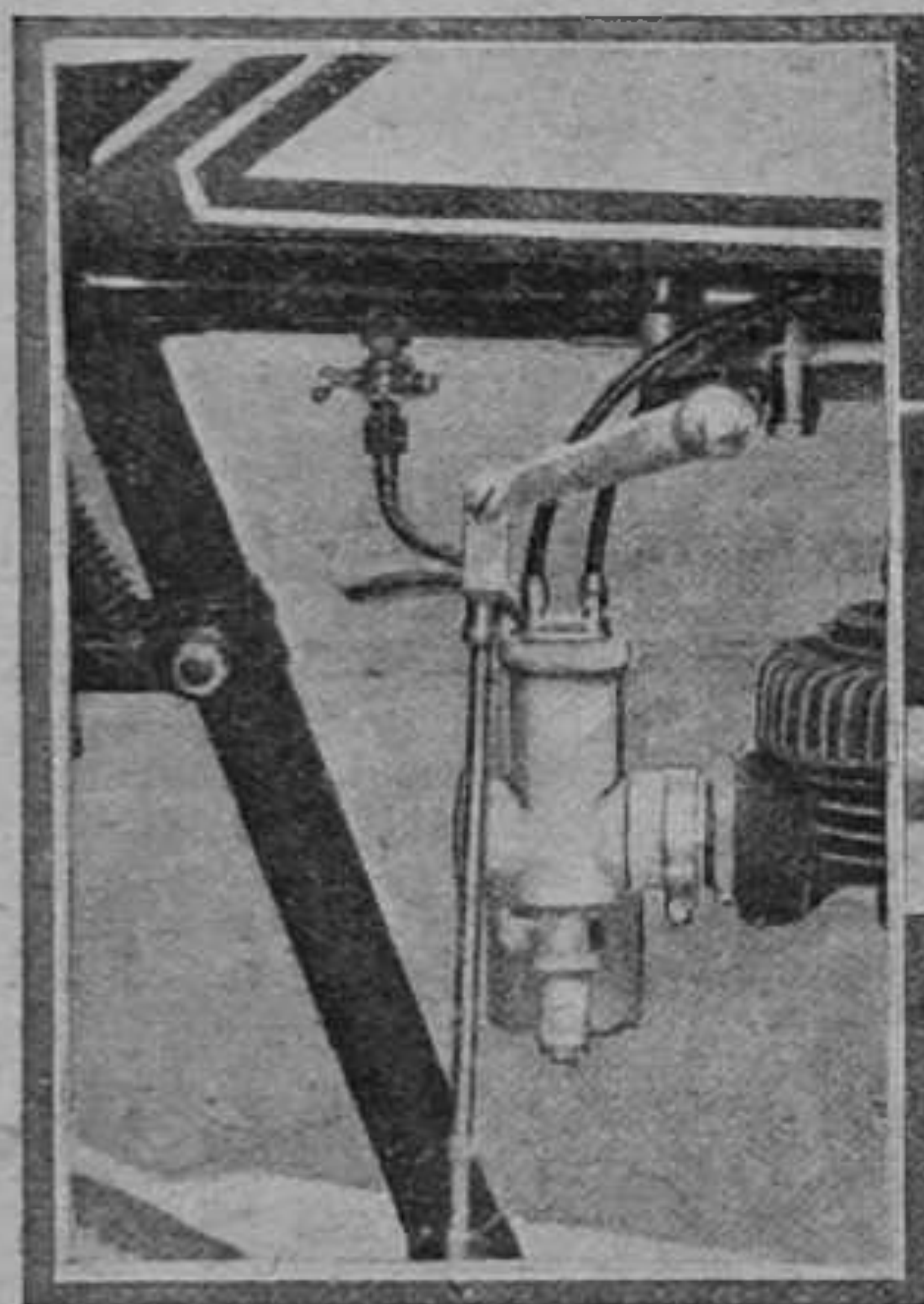
C.D.C.

WHAT IS IT ?

Inauguration of an Interesting Competition Whereby Our Readers Can Win the Best and Biggest Pair of Covers and Tubes which can be Purchased from any Tyre Advertiser in "Motor Cycling"—Second and Third Prizes of Commensurate Value.

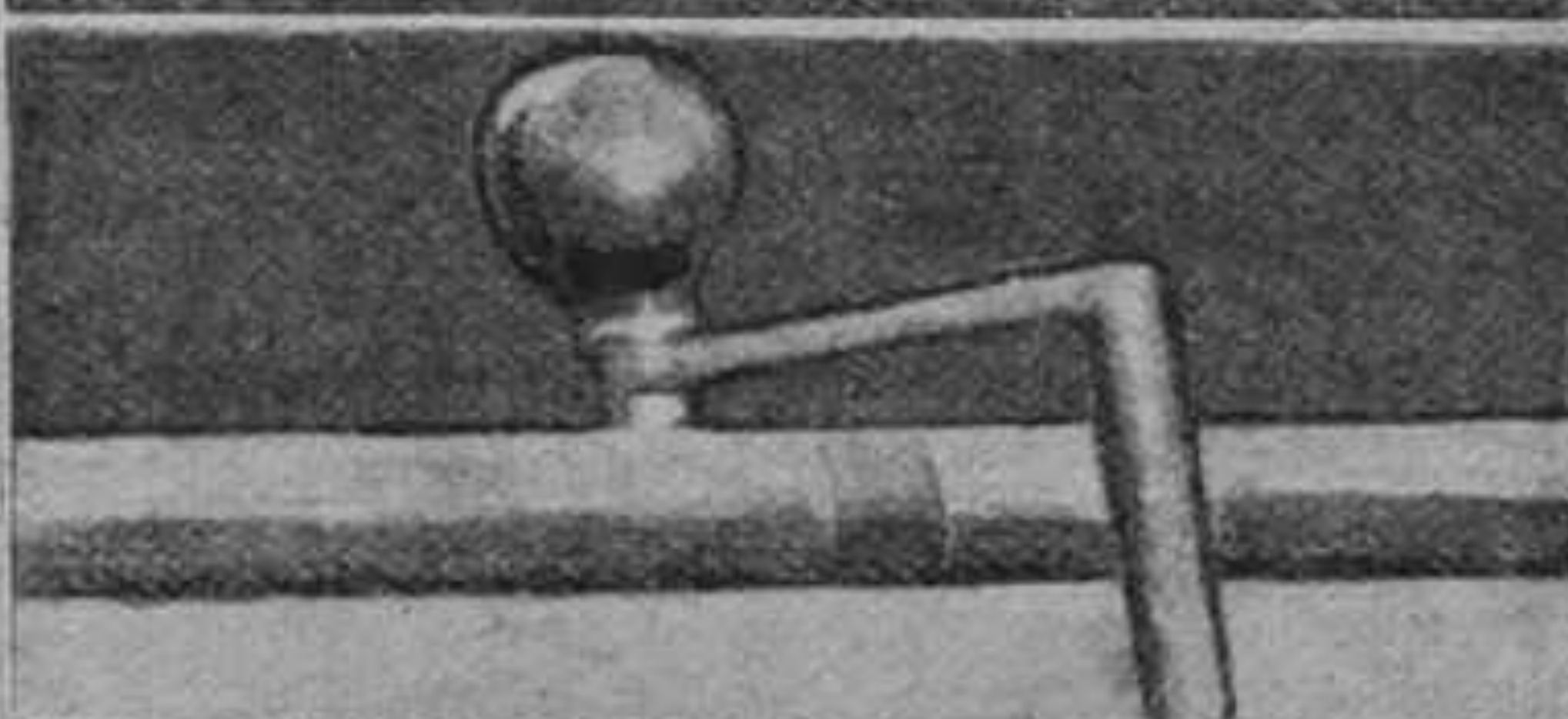
GENERALLY it is MOTOR CYCLING that leads the way with new ideas and innovations, but for once in a way we must credit another journal, the "Motor Cycle Illustrated" of New York, for suggesting to us a competition which is being successfully run in the United States. This we feel will prove of the utmost interest to our readers, forming a fascinating pastime and at the same time being of

seen, therefore, that for an outlay of 6½d., the sum for which 13 stamped postcards can be obtained from any post office, a set of tyres which may cost anything up to £10 may be won. It must be clearly understood that it is not necessary for a reader accurately to guess the correct machine in each case. One mark will be awarded for each correct solution. The maximum will, of course, be 39 marks, but we do not expect for



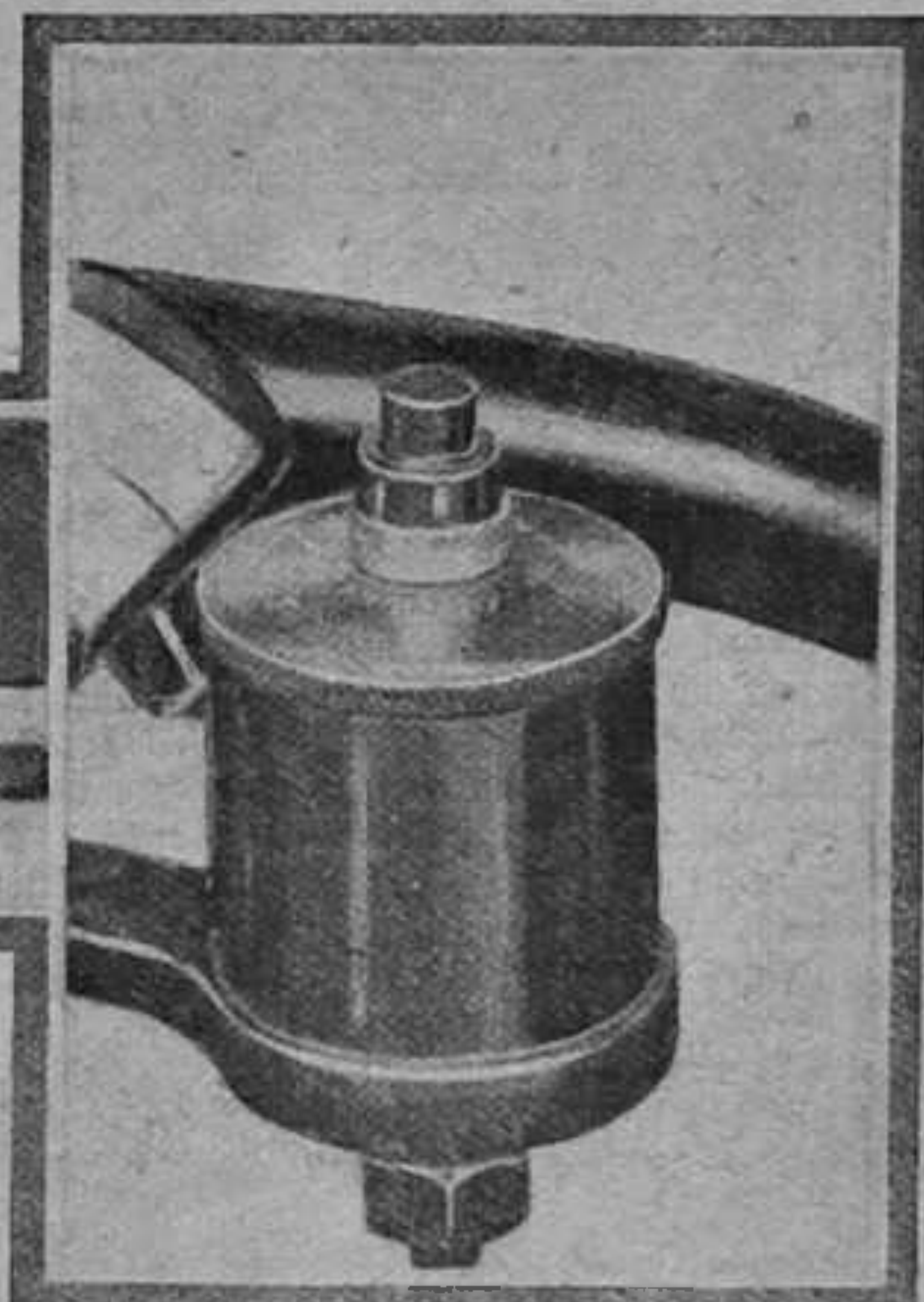
1.—? ? ? ? ?

WHAT MACHINES DO THESE
ILLUSTRATIONS REPRESENT
A PART OF?



2.—? ? ? ? ?

THE MOST INTERESTING COM-
PETITION EVER ANNOUNCED.



3.—? ? ? ? ?

considerable educational value. The competition, in brief, is as follows:—

In 13 issues of MOTOR CYCLING—i.e., in the present issue and the 12 consecutive issues—we shall publish three illustrations of parts of different English motorcycles. All that the reader has to do is to forward to us a postcard stating of which machines these illustrations form a part. At the end of 13 weeks the reader who has given the greatest number of correct answers will be awarded the biggest and best set of covers and tubes that he can fit to the rims of his machine, which he may purchase from any tyre advertiser whose advertisement appears in MOTOR CYCLING. Second and third prizes commensurate in value will be awarded to those two readers whose replies are second and third in point of accuracy. There are no entrance fees, and actual members of the motorcycle trade and second-hand agents are barred from entry. It will be

one moment that the maximum number of marks will be gained. Readers therefore should not be disheartened if any of the illustrations prove too difficult. A point that we insist upon is the absolute necessity of following the rules. Answers must not be given in letters; only a postcard will be accepted, and each postcard should be addressed to the Editor, MOTOR CYCLING, 7-15, Rosebery Avenue, London, E.C., and must have "Competition" written in the top left-hand corner. In order that there shall be no confusion, we reproduce the front and back of an imaginary postcard properly addressed and filled up.

To allow despatch riders and other overseas readers an opportunity of entering the names of the machines parts of which are illustrated, the weekly results will only be published at the conclusion of the competition. It would be very advisable for entrants to place a definite order for the next 12 copies of MOTOR CYCLING either with their newsagent or with

What Is It? (contd.).

Temple Press Ltd. These can be obtained from us post free for 1s. 6d., whereas, of course, if the order is placed with a newsagent, the postage will be saved and the 12 issues will be obtainable for 1s.

The weekly results need not be sent in weekly, although we trust that whenever possible this will be done, owing to our greatly depleted staff. Naturally the more entrants there are the more interesting will the competition become, and therefore each reader who is in the unlikely circumstance of knowing a motorcyclist who is not a regular contributor to MOTOR CYCLING should draw his attention to the competition.

For absolute clearness, we append the following summary:—

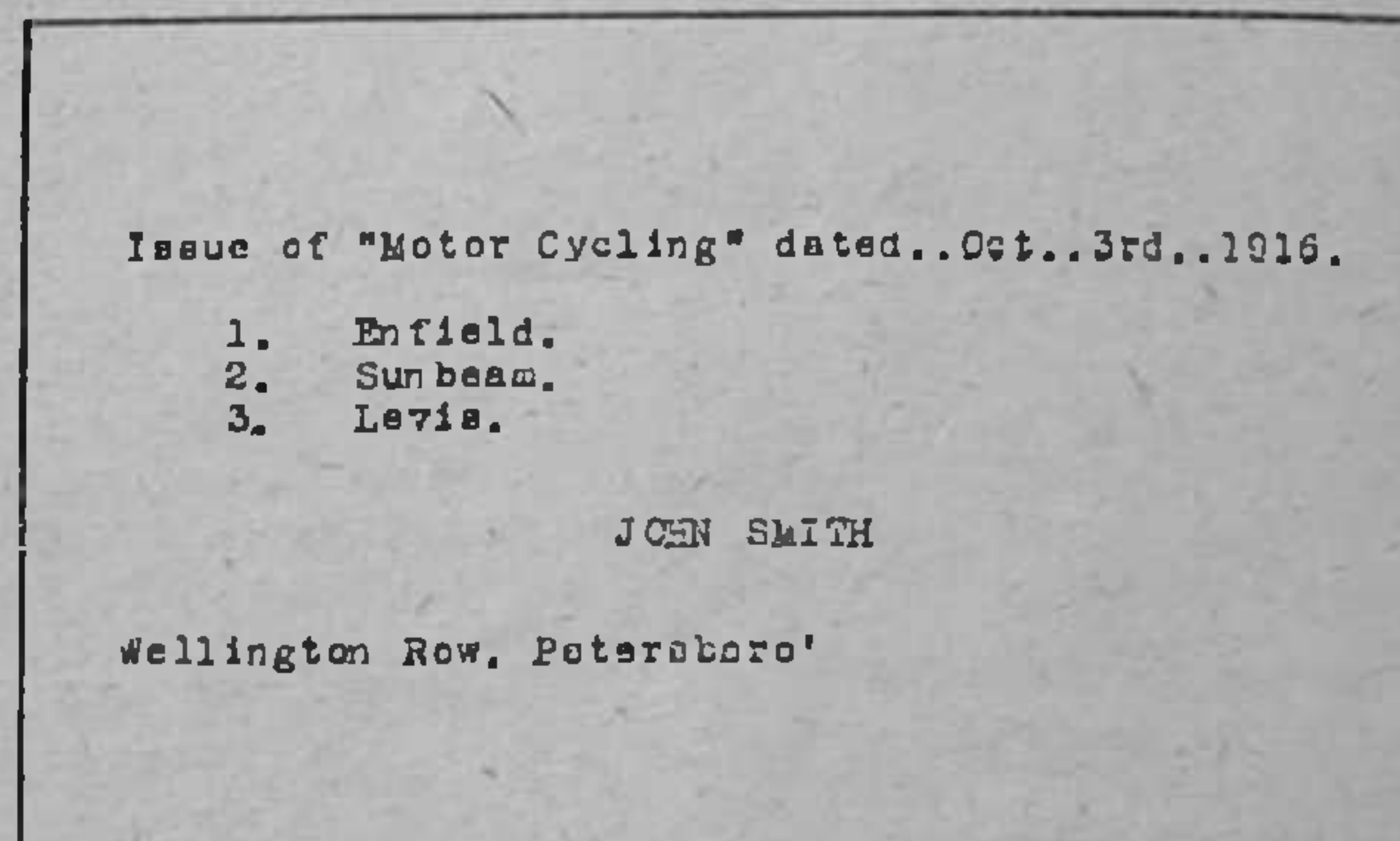
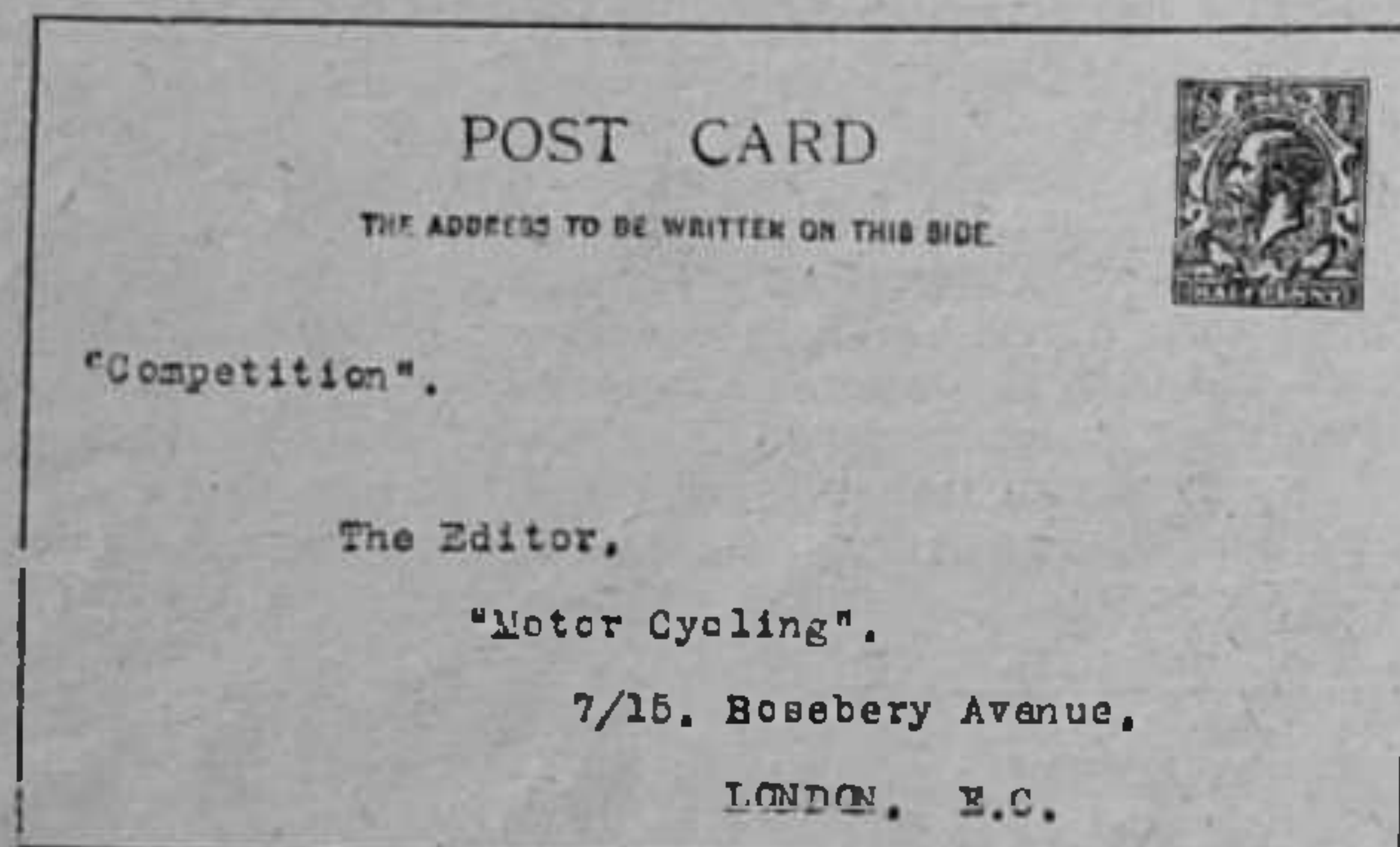
1. In all 36 illustrations of parts of not necessarily different machines will appear.

2. On a postcard addressed to the Editor, MOTOR CYCLING, 7-15, Rosebery Avenue, London, E.C., with "Competition" written in the top left-hand corner, each reader will give what he considers to be the make of machine of which the illustrations represent a part.

3. The first prize will be a complete set of covers and tubes of any make or size purchasable from a tyre advertiser in MOTOR CYCLING.

4. Second and third prizes commensurate in value will also be awarded.

5. At the conclusion of 13 weeks, in the event of a tie, the names of those who have tied will be published and further illustrations will appear, and those readers will continue the competition. The illustrations being made more difficult until the first, second, and third places are found.



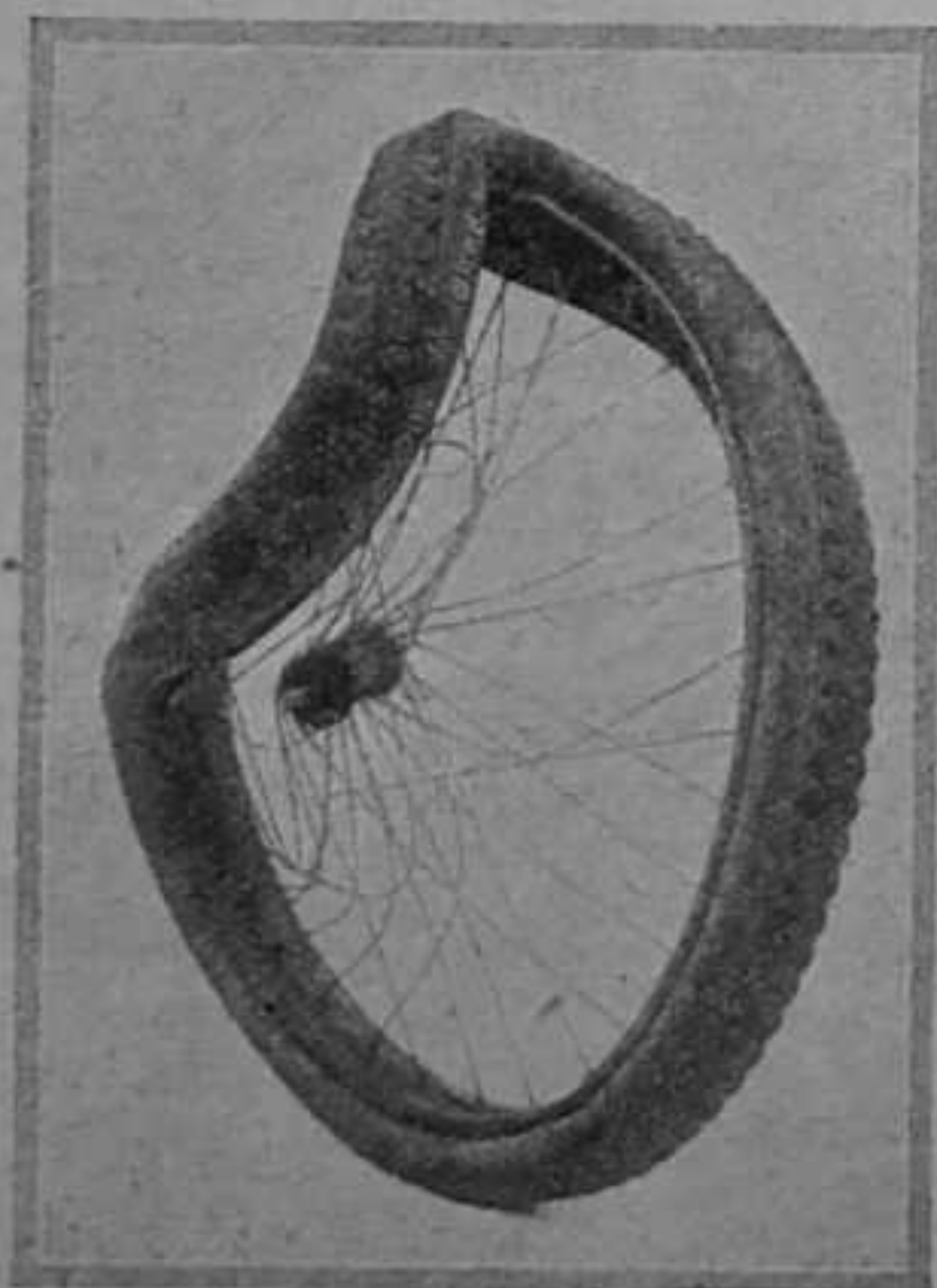
The way the postcards should be addressed, and—

—how the result should be recorded.

NOTES AND NEWS.

"Clincher" Reliability.

The following incident furnishes striking proof of the reliable quality of Clincher tyres. A motorcyclist had a bad smash, which bent the front wheel of his machine in the manner shown by the illustration. In spite of this, however, the Clincher cover did not burst, both cover and tube remaining intact upon the rim. Incidentally, this cover, a Clincher de Luxe non-skid, had run several thousand miles.



The result of a smash.

The 1917 Morgan.

"The Light Car and Cyclecar" published yesterday the first illustrated details of the 1917 Morgan, a striking improvement in the appearance of which has been effected.

Experienced Motorcyclist's First Fine.

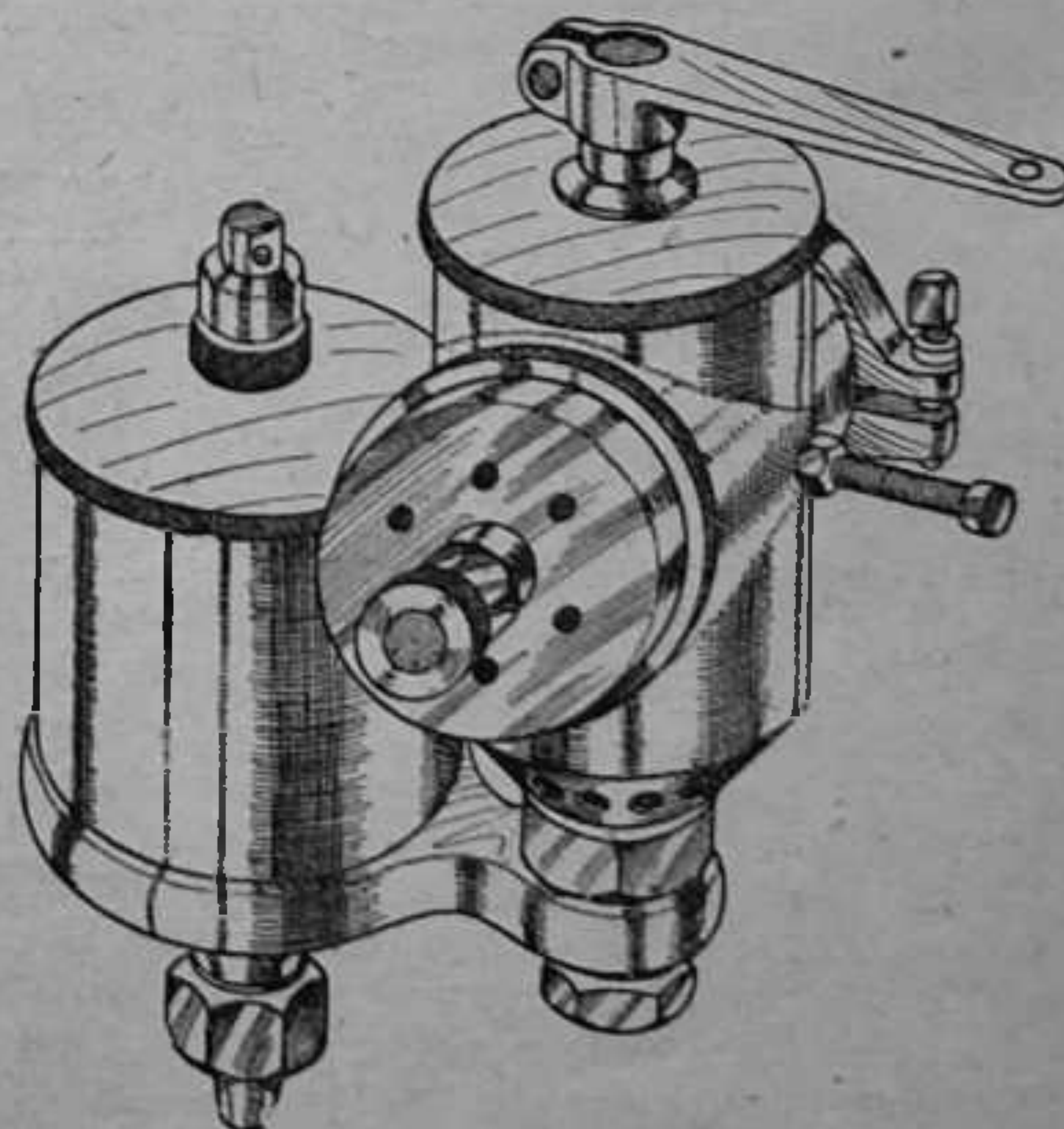
Charged with driving a motorcycle dangerously, a traveller of Nottingham said that he had ridden 55,000 miles in five years and had never been stopped. When pulled up he was going at a reasonable speed. A cyclist witness supported this statement, adding that he was struck by the smart manner in which defendant pulled up. If he had been going at an excessive speed he would probably have been killed. He was a motorist himself, and estimated defendant's speed at 15 or 16 m.p.h., and not 30 as stated. The chairman decided to fine defendant £2, and said the bench were determined, as far as they could, to put a stop to fast driving through the village where the alleged offence occurred. Apparently this determination is to be carried out regardless of justice.

The Arbuthnot Trophy.

For some unexplained reason the A.C.U. has closed the Arbuthnot Trophy Fund, which now stands at £214 4s

"Business as Usual." Effort Discouraged.

At Aberdeen recently a motorcycle agent was fined £3, with the alternative of 20 days imprisonment, for obtaining a driving licence for his fifteen-year-old son by a false statement concerning the age of the lad. In defence it was stated that all the employees of accused had enlisted.



A simple automatic carburettor, produced by Messrs A.M.A.C., which was primarily intended for stationary engine work, has proved successful on two-stroke power units.

WOMAN AND HER MOTORCYCLE

A Feature for Feminine Riders

TAKING DELIVERY OF A NEW MACHINE.



An Article that, if the Excellent Advice Contained Therein is Followed, will Save the Beginner a Quantity of Trouble.

AMONG the penances bequeathed to us by our forefather Adam there is one special one which, in the words of our friends over the water, does just give me the cold, cold spine. It consists of taking delivery of a brand new machine, finding out all about it in the space of five minutes or so, and driving it home straightaway through thick traffic. Alas! this sad fate often overtakes me, and I have gained experience in tackling it by such bitter means that I think I might pass on some tips upon the subject without being thought too much of a bore.

To begin with, it is safe to assume nowadays that a machine is most unlikely to arrive to time. Luggage may be held up for days at some siding or small station only a few miles from the place where it was put on rail, and the helpless receiver at the other end may waste all that time mooning round the station after the expected train, get into a red-hot state of irritability over the whole affair, and finally abandon the terminus perhaps half-an-hour or so before the machine arrives. The best course to pursue, if you are in a hurry for your purchase, is to insist upon the makers putting it on a passenger train, in which case it is bound to arrive to time.

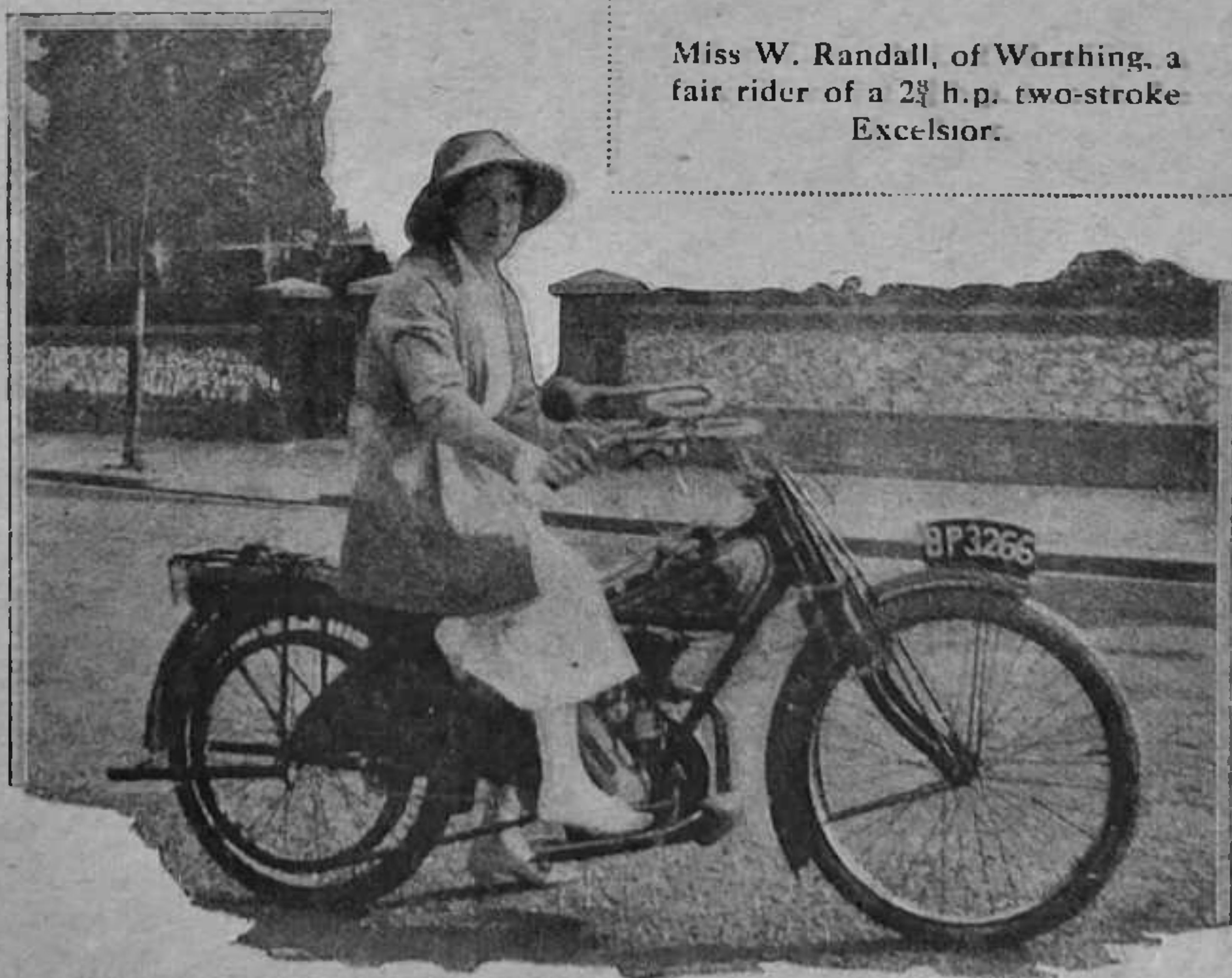
It must be remembered that the machine will probably be destitute of numbers, unless you have arranged to have these painted on by the manufacturers, or trade numbers sent with it under which you can ride to your destination. In case no arrangement has been made, the quickest and simplest method is to take out a number from the County Council for yourself and paint it in white letters upon a black ground on paper. One side of this should be sticky, so that all you have to do is to moisten it and stick it on to the bare plates; or, if no sticky paper is available, carry a small bottle of paste to the station with you. Numbers thus stuck on, however, will not hold very long; if they come loose the best remedy is to tie pieces of thin string across the plates to hold them. I rode 150 miles with paper numbers held like this recently, and they are still quite "legal." It should be remembered that three "plates" will be required, and if the front plates on the machine are curved the paper must, of course, be curved also.

If your machine has not arrived when you reach the terminus, by far the best course to pursue is to find a friendly porter belonging to the luggage department, tell him all your plaintive tale and leave matters to him. All you will have to do then is to pay an occasional visit to his lair among the luggage, and he will acquaint you whether or not the machine has arrived. Otherwise you will have all the bother of

finding out when and at which platform the train from your particular station will arrive, of waiting on the platform till it comes in—and there are few seats on a terminus platform—of rushing up and down the length of the train whenever it comes in, getting snubbed by luggage-van men, etc., etc., etc. Your porter will see to it that the machine is got out of the van quickly and carefully, will arrange matters with the luggage checkers, and will feel sufficiently rewarded by a shilling tip for doing all these things.

Probably there will be carriage to pay on the machine, so it is well to go provided with plenty of money. On a solo machine, coming down to London from the northern hub of motorcycle manufacture, the amount is generally in the region of ten shillings. For identification purposes, also, a card is handy, although it will probably be sufficient to pay carriage and sign in the checking book.

While waiting for the machine it is not a bad plan to walk round and find the nearest garage; a porter will probably tell you of it, and it is wise to make sure that petrol and oil are both available, especially if you are in a hurry. I shall never forget an experience of mine connected with a new machine, a railway terminus, and the garage near it. I was taking delivery of a machine which I had never seen in my life before, but on which I intended to ride down into the heart of Surrey in company with a number of other motorcyclists. I had arranged that the machine should arrive by the night train, that I should come up to the station early next morning, take delivery at my leisure, and find a quiet spot wherein I could ride around a space and get more or less into sympathy with my strange mount before attempting



Miss W. Randall, of Worthing, a fair rider of a 2½ h.p. two-stroke Excelsior.

Woman and Her Motorcycle (contd.).

the run through London traffic. Without going into harrowing details, I may say that I waited for three trains, extending over a period of four hours and a half, and still my mount arrived not. After frantic and extensive telephone calls, during which a queue of would-be other telephonists collected outside my box, and discussed the possibility of breaking in the door and hauling me out by main force, I decided to await the arrival of one more train. As if it had only been waiting till my patience was exhausted, the wretched motorcycle actually did come in at last! All hope of a quiet trial was, of course, at an end; I could just catch my friends by doing a frantic spurt, if I got away at once, and in my red-hot fever to be off I tipped the porter twice, tried to get away without paying any carriage, and stripped a fingernail in tearing off the paper packing with which the machine was covered. At last I was emancipated by the luggage man, and ran at top speed to the garage, trying to take in technical details as I went.

"Fill up of petrol and oil, please! Buck up!"

A diminutive and rather scared-looking infant of the male sex, apparently in sole command, brought cans and funnels, and I busied myself with a parcel which I intended to strap on the carrier.

Horror of horrors! When I looked up, that awful infant was in the act of pouring oil into my petrol tank! I leapt on him, and he collapsed in terror, evidently convinced in his own mind that I had come with the express purpose of murdering him and looting the garage. However, I had no time to waste on bringing him round, and set to work to empty one half gallon of good, thick Vacuum T.T. out of a tank

with a drain tap capacity of about one oil drip per minute. Finally, with the aid of a petrol injector and some cans we managed to cover my nice, new machine with oil and extract all but a gill or so from the tank. Then, with my heart in my mouth, I filled up, tickled the carburetter—from which a yellow, thickish and beastly looking mess slowly exuded—and kicked the starter. To my amazement and unbounded admiration, the machine actually fired. I nearly fainted with joy.

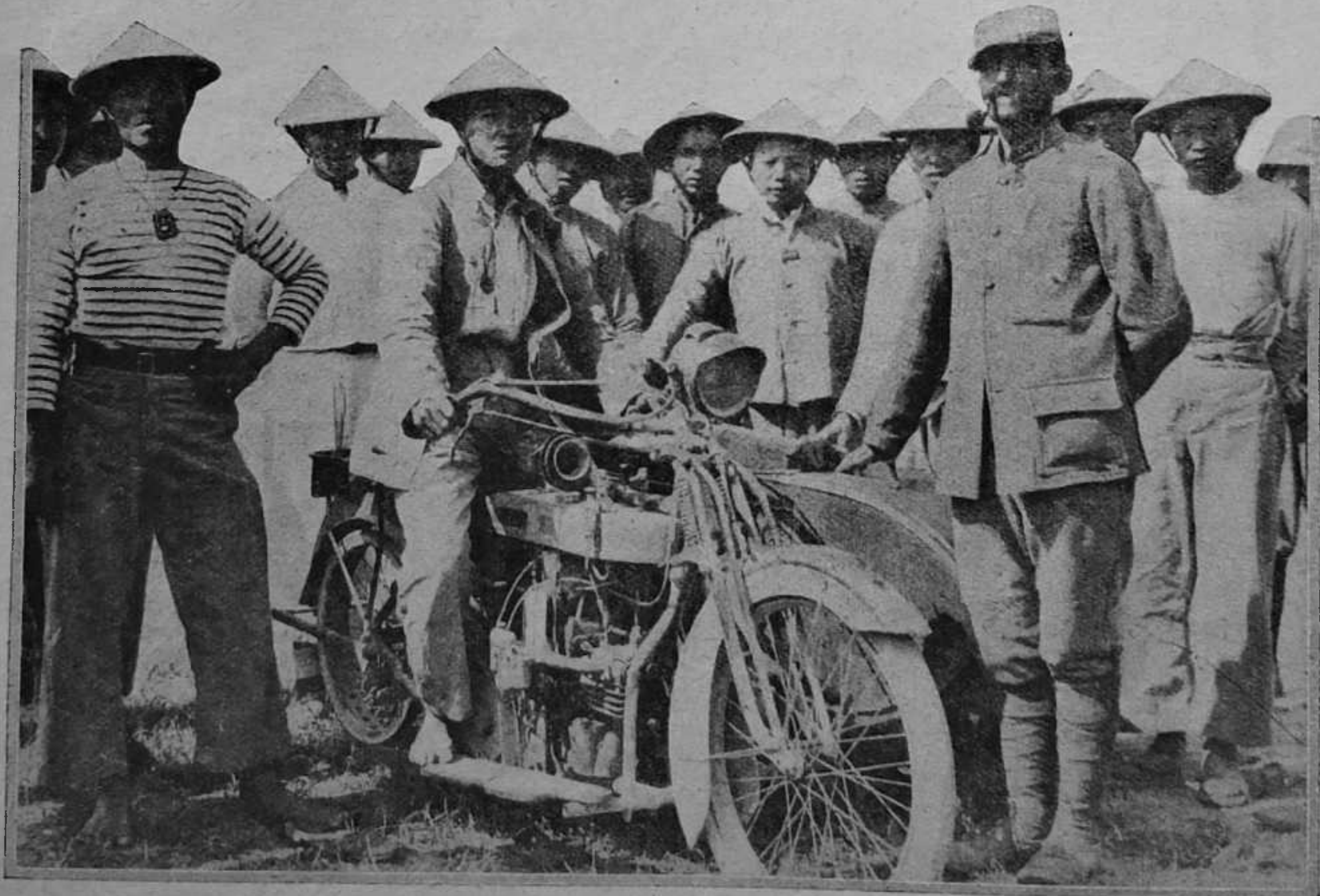
Having conquered the devil, as it were, I had still the deep sea to negotiate, in the shape of a strange machine and some thick London traffic, but thanks to the simplicity of a lady's Douglas—for such it was—won through without mishap, although, of course, I was extremely late in arriving at my destination. Of which little story the point and moral is—when you go to a strange garage, *watch the boy*.

BOADICEA.

—◇◇◇—

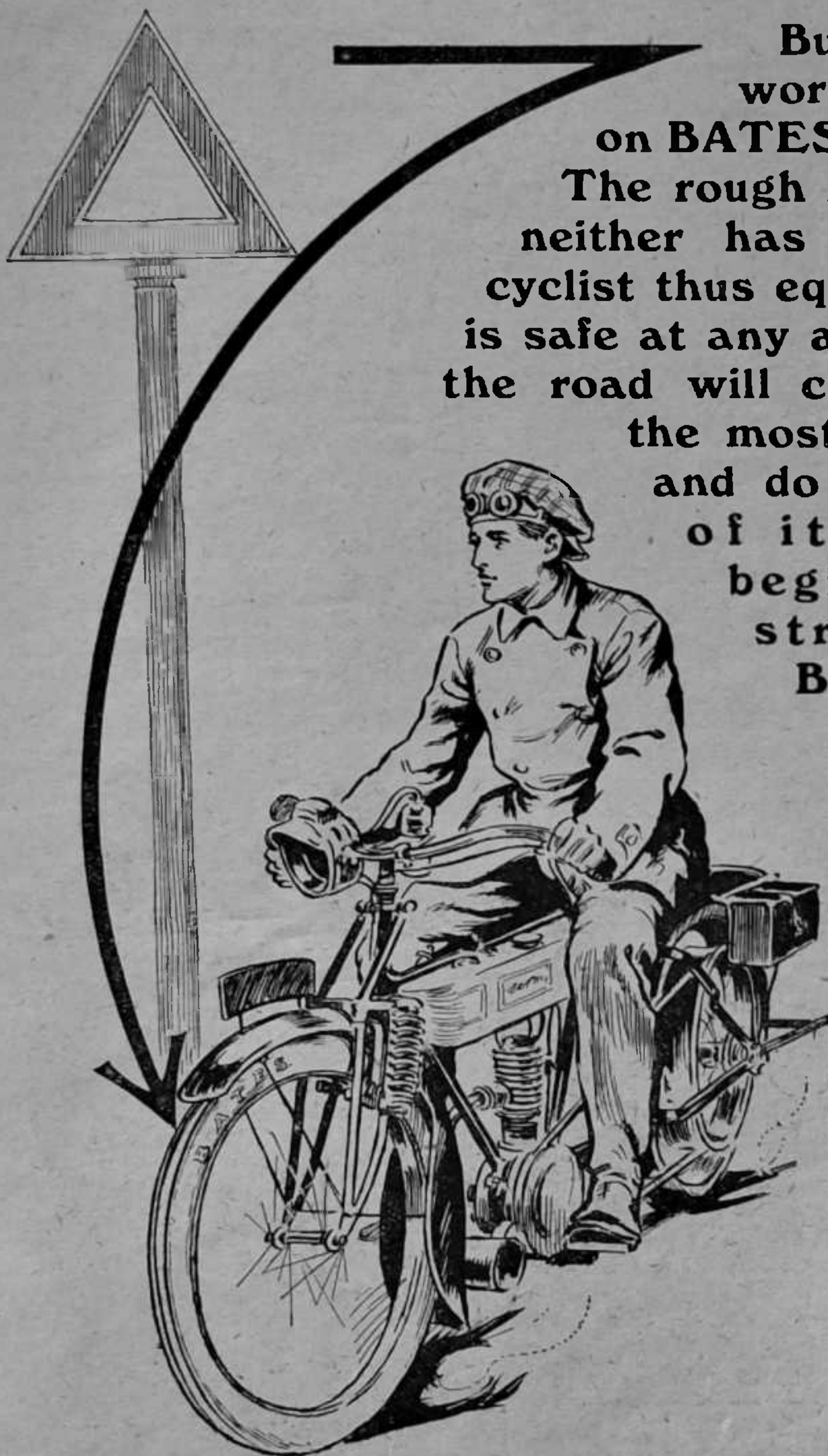
The Second-hand Motor Show.

As announced in a recent issue, the arrangements for the second-hand motor and motorcycle shows to be held under the auspices of Messrs. W. Glass and Co., Ltd., of High Holborn, are as follow:—The various types of machine will be grouped together, and an expert will examine each exhibit, and, if satisfactory, grant a certificate of condition to be attached to each one. The cost of exhibiting, including space, entry in catalogue, certificate, insurance against fire, cleaning and dusting, etc., will be reckoned at 2½ per cent. of each selling price up to £200, and 1½ per cent. above this value. A minimum will be fixed for each type, this being £1 5s. for solo motorcycles and £2 for sidecar or carrier outfits.



The most picturesque fighters in the great conflict. Annamites from French Cochin China, stationed at Salonika, making their first acquaintance with the modern motorcycle, the machine being a 4 h.p. Douglas sidecar. The amulets that these men wear as a protection against bullets will be noted. To steal an amulet from an Annamite always means, to friend or foe, a rather speedy end.

It Depends on the Tyre



But there is no need to worry if you are riding on BATES "British-built" Tyres. The rough road, the sharp turn—neither has any terror for the cyclist thus equipped. A Bates tyre is safe at any angle. Its firm grip of the road will carry you safely over the most treacherous surface, and do it as well at the end of its life as at the beginning. That's the strong point about BATES protection. It lasts as long, as the tyre does.



The British and Italian War Offices, The South African Defence Force, The South African Police, and the New Zealand Post Office have recently placed contracts with

Bates
SUPER RUBBER.
Tyres

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W. & A. BATES, LIMITED,
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Depots—LONDON, GLASGOW, & NEWCASTLE.

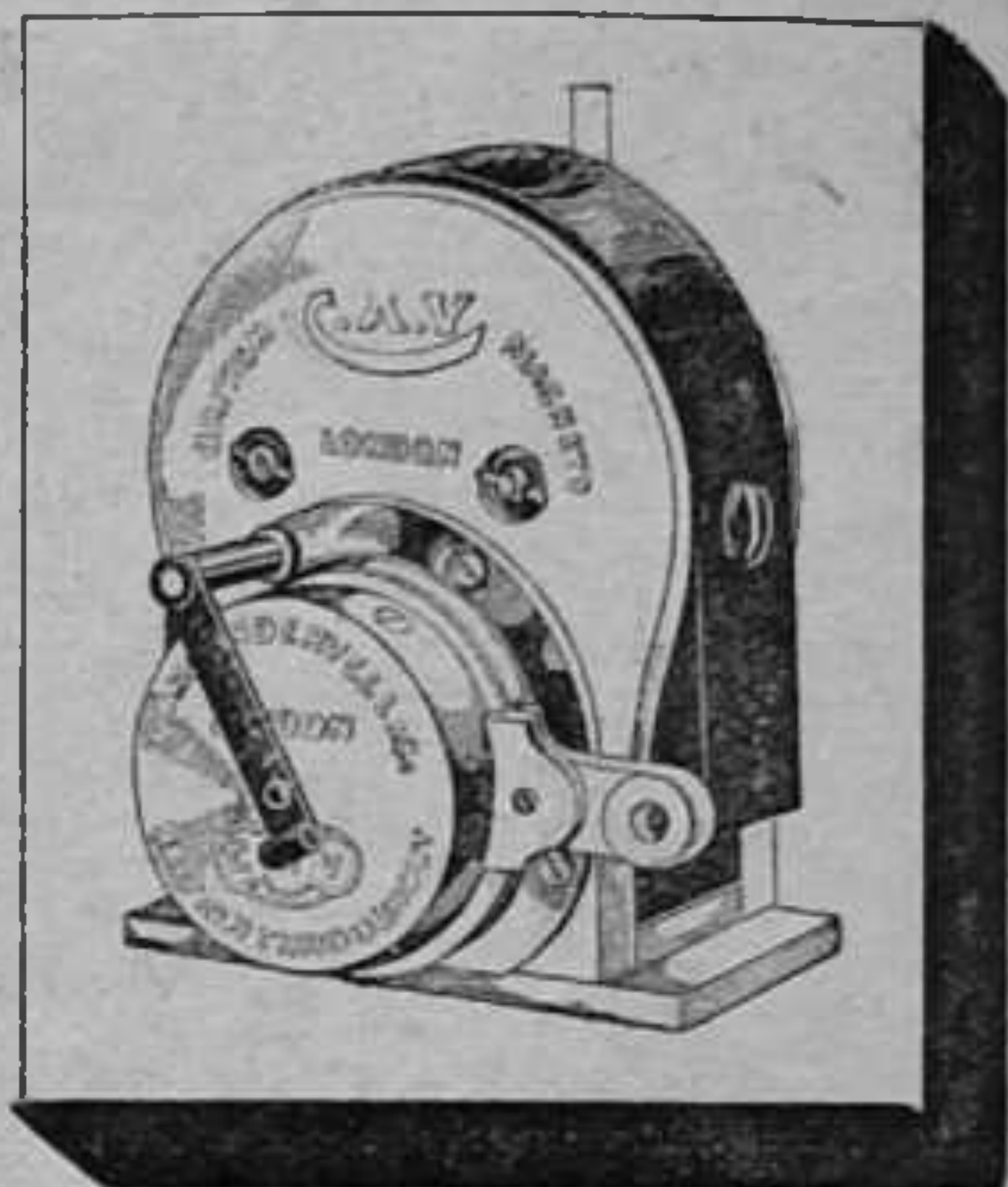
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C.A.V. Magnetos

BRITISH THROUGHOUT

Ignition troubles cannot exist

when the Motor-bike or Cyclecar is fitted with a C.A.V. Magneto. — It's the little contrivance that sparks for sure even at walking pace — the Magneto which water, dust, heat or cold cannot put out of action — the Magneto that relieves all ignition anxieties. . . . Write now for folder.



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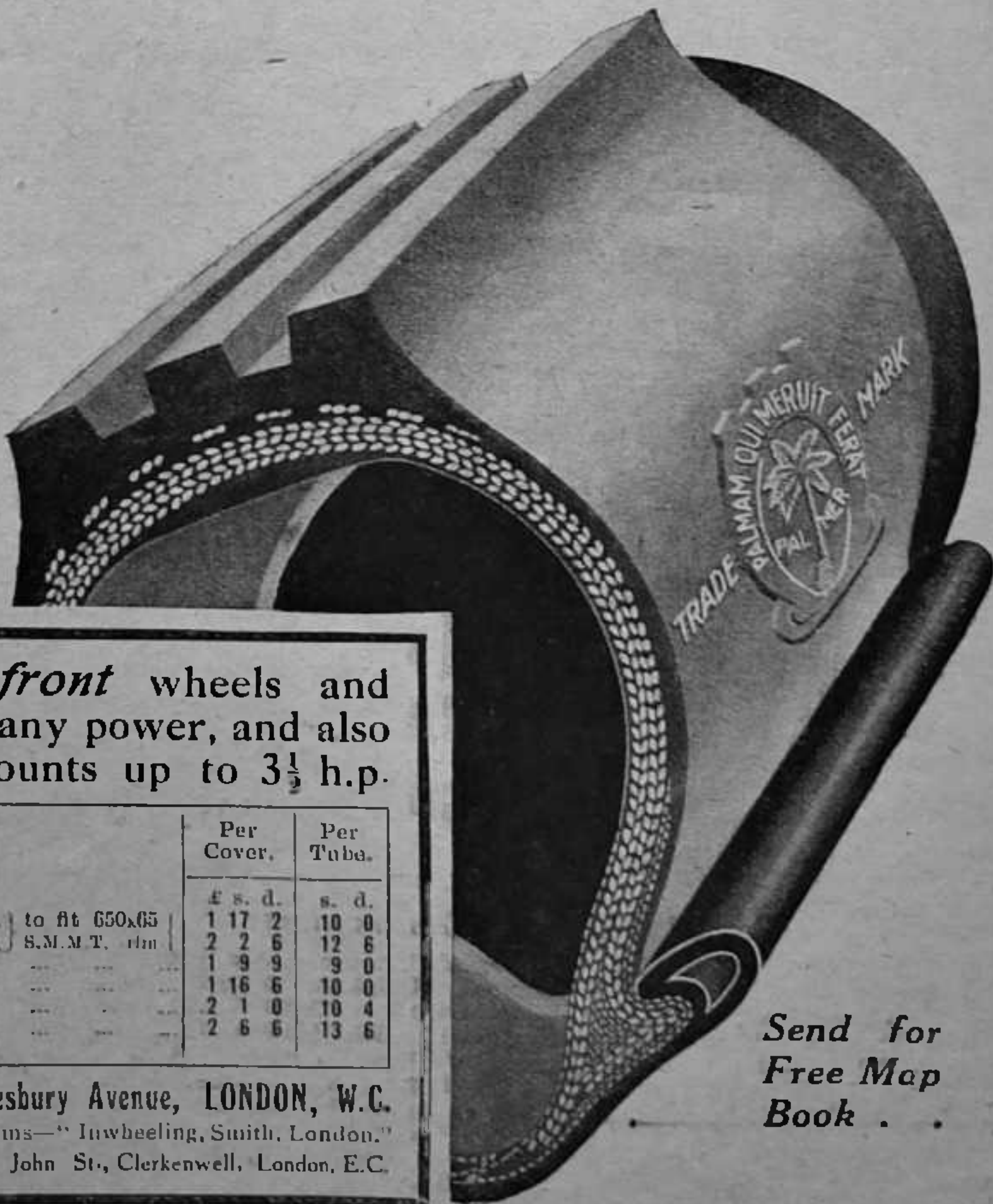
PALMER

ORIGINATORS OF THE THREE RIB TYRE

FOUR-PLY

FABRIC TYRES

enable you to more than save the increased cost of petrol.



Strongly recommended for *front* wheels and *sidecar* wheels of any outfit of any power, and also for *driving* wheels of solo mounts up to 3½ h.p.

	Per Cover.		Per Tube			Per Cover.		Per Tube.	
	£	s. d.	£	s. d.		£	s. d.	£	s. d.
24x2 in.	1	6 6	6 6		650x65mm.	1	17 2	10 0	
24x2½ in.	1	13 0	7 0		700x70mm.	2	2 6	12 6	
26x2 in.	1	7 10	7 9		28x2 in.	1	9 9	9 0	
26x2½ in.	1	14 4	9 0		28x2½ in.	1	16 6	10 0	
26x2 in. to fit 2½ in.	1	15 8	9 7		28x2½ in.	2	1 0	10 4	
26x2½ in.	1	17 2	10 0		28x3 in.	2	6 6	13 6	
26x2½ in. (to fit 2½ in. rim)	1	17 2	10 0						

THE PALMER TYRE, LTD., 119, 121, 123, Shaftesbury Avenue, LONDON, W.C.
Telephone—City 1485 and 1486 (2 lines). Telegrams—"Inwheeling, Smith, London."
Cycle and Motor Cycle Tyre and Repair Dept.—103, St. John St., Clerkenwell, London, E.C.

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NEWS and

MotorCycling

JOTTINGS.

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LIGHTING
—UP—
TIMES.

Next
Saturday,
7th October.



MOON.—Three days after first quarter; rises in afternoon.

Inner Tubes for First Aid.

An interesting paragraph in the daily Press solicits old inner tubes from motorcycle and car owners, to be sent to the Marylebone Red Cross Working Centre, 29, Portman Square, London, W. The tubes can be converted into fracture cradles for the shattered limbs of the wounded.

Roads Improvement Association.

Mr. Wallace E. Riche, for many years Secretary of the Roads Improvement Association, has taken up his military duties, and last week joined the Artists Rifles O.T.C.

The Council of the Association has been fortunate in obtaining the temporary services, as Acting Secretary, of Mr. J. D. Haworth, a partner in the firm of Major Tulloch and Haworth, Consulting and Civil Engineers, of 28, Victoria Street, S.W. Mr. Haworth, who has already been initiated into his duties, will continue the work of the R.I.A. at its headquarters in London, the address being 15, Dartmouth Street, Westminster, S.W., as well as continuing his own practice. We also understand that Mr. Haworth hopes at an early date to visit the several provincial centres of the R.I.A.

At a time like the present, when the Road Board is calling for proposals in respect of after-war road construction and improvement, continued support for the R.I.A. is as important as the maintenance of its organization, and we feel sure that Mr. Haworth will obtain all possible help and co-operation.

How to Drive a Light Car or Cyclecar.

A new series, "How to Drive a Light Car or a Cyclecar," begins in yesterday's issue of "The Light Car and Cyclecar." The first instalment deals with preliminary first principles, and subsequent articles will show the proper method of placing the car on any desired course and explain the more subtle distinction between the average and the expert driver. This is a most valuable series, abundantly illustrated. The description of the working of a gearbox and the methods of obtaining silent gear changes is particularly lucid.

Motorcyclist V.C.

Our readers will join us with admiration and regret on hearing the announcement of the news that Lieut. Baxter, the well-known Liverpool motorcyclist, has been awarded the V.C., being the first motorcyclist to receive that honour, but at the same time being reported missing. Lieut. Edward F. Baxter gained the highest award a British soldier can win



Lieut. E. F. Baxter, the famous motorcyclist, who has been awarded the V.C. Unfortunately there seems no doubt that he has been killed.

through a series of gallant actions. The official announcement of the award reads as follows:—

"On one occasion a bomb slipped and fell to the ground, but he instantly picked it up, unscrewed the base plug, and took out the detonator, which he smothered in the ground, thereby preventing the alarm being given, and undoubtedly saving many casualties. Later he led the left storming party with the greatest gallantry, and was the first man into the trench, shooting the sentry with his revolver. He then assisted to bomb dug-outs, and finally climbed out of the trench and assisted the last man over the parapet. After this he was not seen again, though search parties went out at once to look after him."

Harley Victory in Denmark.

The Danish one kilometre hill climbing contest, run off on 24th September last, has resulted in a victory for a Harley-Davidson machine. Mounted on the latter the winner succeeded in breaking the record for this climb by four seconds.

Dimmed Lights.

Solely for the information of our readers, we should like to point out an inaccurate statement appearing in a recent issue of a contemporary, in which it is inferred that in only actual eastern counties of England are a sheet of tissue paper and a card in which six holes are cut necessary in the headlamp after lighting-up time. We should like to point out that there are many districts outside what are actually the eastern counties where the above restrictions are necessary. Readers are reminded that we publish a booklet costing one penny, post free, in which all restricted areas are given, together with a complete list of all lighting regulations.

Well-known Motorcyclist Missing.

We regret to have to announce that Flight Lieut. O. C. Godfrey, the famous motorcyclist, who, it will be remembered, left for France some two or three weeks ago, after recovering from a flying accident, is now reported missing. Although nothing can be said definitely on the subject, we are able to announce that he was last seen planing down with his machine under control into the German lines, evidently having suffered from engine trouble or the like. Lieut. Godfrey has been in the thick of the fighting on the Somme since he arrived at the Front.



Lieut. O. C. Godfrey, R.F.C., who is reported missing.

News (contd.).

Service Drivers Wanted.

Many drivers are still required, notwithstanding the recent announcement in *MOTOR CYCLING*, for various branches of the Services. Men in such classes as B1 and B2, etc., should apply to the officer in charge, Trade Test, R.F.C., Curzon Hall, Birmingham.

Road Board Funds.

In view of the amount of work ahead of the Road Board, it is pleasing to learn that this body have in hand the comfortable net balance of £2,507,665. Although nearly half of this sum has already been allotted, repayments will probably be made before the next report in 1917 falls due, which will restore the balance to its original amount.

Will Kempol be Restricted?

Efforts are now being made by the authorities, apparently, to apply to petrol substitutes the same restrictions as those under which pure petrol now labours. It will be a relief to motorists to hear that some definite decision upon this point must now be given by the Petrol Committee, as the controversy has at last reached a court of law in the case of the Llandudno Motor and Garage Co. The fuel in question is Kempol, and the Llandudno Co. are supported by the Commercial Motor Users Association.

"A Ridiculous Attitude."

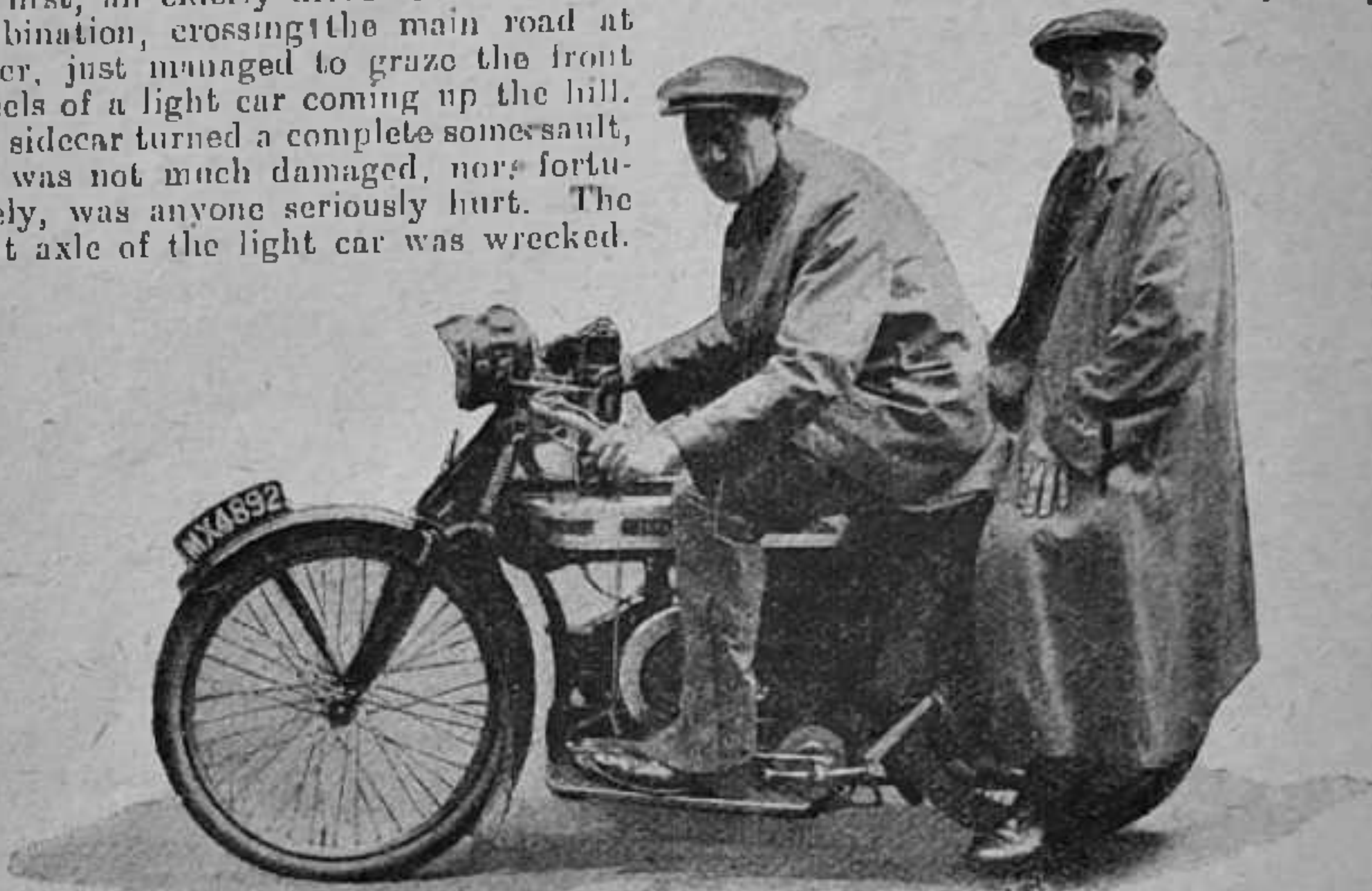
Charged with driving his motorcycle, which he controlled from the sidecar, to the public danger, a motorcyclist stated that he had had the controls altered for the express purpose of driving from the sidecar. All the controls were on the left side of the machine, and he had the outfit under perfect control. It was merely a matter of riding comfortably. The chairman remarked that it was a ridiculous attitude. On being asked if he would agree to an adjournment for an inspection of the road, defendant said he was willing, if the magistrates would view it at his expense with lunch thrown in. The Bench smilingly declined the invitation, however, and fined defendant 20s.

Accidents on the Ripley Road.

Far more motorcycles and cars were seen on the roads the last week-end in September than have been witnessed since the petrol licence scheme came into force. As usual, when the traffic is a little heavy, several accidents on the Ripley road were witnessed, in two of which motorcyclists were involved. In the first, an elderly driver of an Enfield combination, crossing the main road at Esher, just managed to graze the front wheels of a light car coming up the hill. The sidecar turned a complete somersault, but was not much damaged, nor, fortunately, was anyone seriously hurt. The front axle of the light car was wrecked.

Beating the Train.

Two South African motorcyclists undertook for a wager to beat the train service between Johannesburg and Durban, the time usually taken by the trains between the two cities being 23 hrs. 22 mins. The attempt was quite successful, the motorcyclists beating the train service by approximately five hours, taking 18 hrs. 24 mins. over the journey.



Although we do not agree with the pillion method of carrying a passenger, there is no doubt that the practice is growing. Probably this is due to the petrol permits compelling economy, and this class of travelling for two, certainly scores on the economy point. Mr. E. Brain of Bristol, habitually carries his father, aged 76, on the carrier, the combined weight being 23 stone 11 lb. The Bristol-Brinkworth, and return journey, which is 72 miles, generally consumes five pints of petrol—about 114 m.p.g.

The second accident occurred just at the termination of a speed-limit trap at Ditton, a sidecar suddenly parting company with the machine, fortunately, again, without serious consequences.

Possible Water Rate in Okehampton.

All numbers of cars and motorcycles kept in the borough are being noted by the Okehampton Town Council, in view of a possible water rate, for the supply of water for washing.

Triumph Repairs.

We are informed by the Triumph Cycle Co., Ltd., of Coventry, that owing to great pressure of war work they are quite unable to undertake any motorcycle repairs. Private owners desirous of having their machines repaired should approach the local agent. London motorcyclists can of course rely upon the services of the London depot in Great Portland Street, W.



B.S.A. and Harley-Davidson sidecars that assisted in the recent wounded soldiers outing, organized by Mr. C. A. Easting, of Birmingham, to Clent, Worcestershire.

News (contd.).

Two Independent Brakes.

There are an outbreak of prosecutions against motorcyclists whose machines are not provided with two independent brakes.

New Hudson Co.'s Report.

The report of the New Hudson Cycle Co., Ltd., states that their trading profit, rent, dividends, and transfer fees, etc., for the past year amount to £82,954. After meeting expenses, amounting in all to £21,640, there is a net profit of £61,314, which, with balance brought forward, becomes an available balance of £65,450.

N.M.V. Sports and Gymkhana.

The sports and gymkhana of the Motorcycle Section, National Motor Volunteers, Heavy Car Battalion, were held with great success on the Aigburth Cricket Club grounds recently. Fine weather tempted about 1000 spectators to assemble and witness the events, which included:—Blindfold bending race; boys' race; long jump; N.C.O.'s cigarette and needle-threading race; high jump; sack race; blindfold boxing; girls' race; apple bobbing; officers' petrol supply race; comic costume race; squadron relay race; human wheelbarrow race; balloon race; tug-of-war, N.M.V. v. Aigburth Cricket Club; Boy Scouts relay race; treacle roll; football in sacks, N.M.V. v. Aigburth Cricket Club. Prizes were presented by Mr. C. C. Norton, and included a pair of motor tyres, kindly presented by Messrs. Wood-Milne Rubber Co., Preston. The proceeds from the gymkhana will go towards the funds of the Motorcycle Section, N.M.V. Further jollification was provided by the Litherland Silver Band, which was in attendance, and Section-Commander S. W. Phillpott, in whose hands was the control of the entire arrangements.

Motorcyclist Dashes into Harbour.

A remarkable accident was sustained by a motorcyclist at Penzance recently. On endeavouring to mount his machine on the wharf road, the rider struck his foot against a leather case behind the saddle, causing the machine to swerve and dash into the harbour, in which there was about 12 ft. of water. A carpenter who saw the accident, threw a life-buoy to the motorcyclist, who was brought ashore unhurt. The machine was subsequently recovered by dragging.

Benzole in U.S.A.

Rising petrol prices in America have turned the attention of many motorists over the water to benzole as a motive fuel. The output of this spirit is now undoubtedly on the increase in U.S.A., as will be seen by a comparison of the benzole products valuations in 1914 and 1915. These rose from £200,000 to over £1,500,000 in the two years. Benzole plants have been more than doubled during the last year in the States. With the British output benzole may yet become the most popular motor spirit.



Thousands of motorcyclists and motorists made another of the now usual and popular pilgrimages that occur after a Zeppelin raid to see the latest wrecked raider. Those who were making their way to see the burnt Zepp. were hearted by the news that yet another had been captured. The paper boys also did a tremendous trade selling papers which did not contain the news as to where the Zeppelin was!



Owing to the strong military cordon round the burnt Zeppelin, which was brought down in — Essex, a repetition of the Cuffley souvenir hunting scenes was not repeated. Dozens of R.N.A.S. lorries were, however, employed to remove the wreckage, and thousands of pilgrims were able to pluck trophies as the lorries passed and when they pulled up by the wayside.

The Manufacture of a Motorcycle Power Unit.

[SEVENTH SERIES.]

The Construction of the Timing Case and Magneto Chain Cover.

IN the J.A.P. engine the cover of the timing mechanism chest is one with an extension which forms the back of the magneto chain case. This is formed of a malleable casting, which, as is usual with this type of casting, is, when received from the

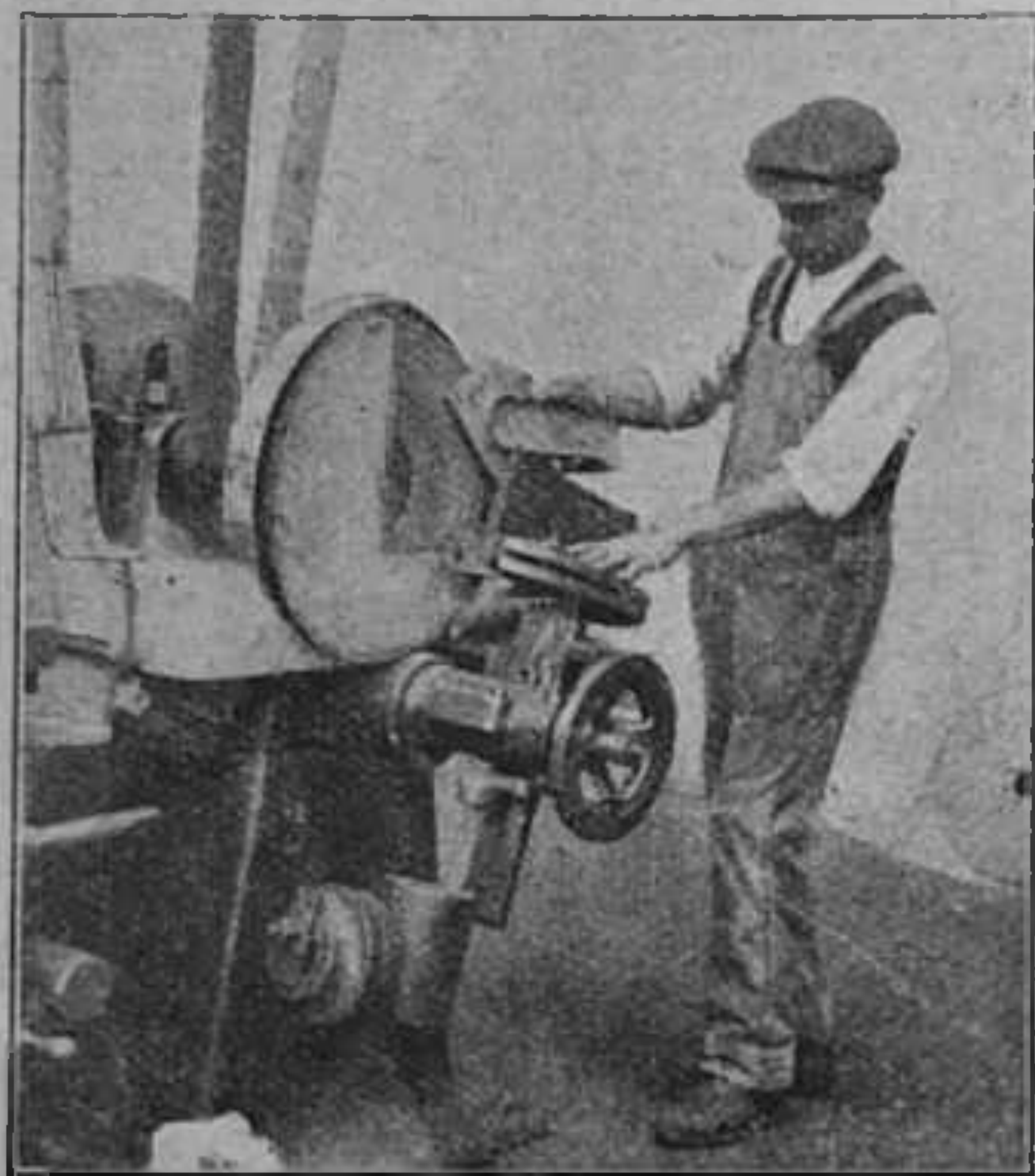


Fig. 1.—Grinding the joints dead flat. This part is held in a jig, which passes backward and forward in front of the revolving grinder. Both the timing chest and chain cover are thus treated.

foundry, considerably warped. The first operation, therefore, is to grind the faces of the timing mechanism cover and also the face of the magneto chain cover with absolute accuracy. In order to ensure this the cover is fixed in a jig mounted on a table, which passes backwards and forwards in front of a disc or face-grinder, as shown in Fig. 1. The result of this operation

is a perfectly flat face where the cover fits to the extension of the crankcase.

In Fig. 2 the part under construction is shown fixed in a jig, whilst a drill, which is brought into operation by hand, passes through the guides and

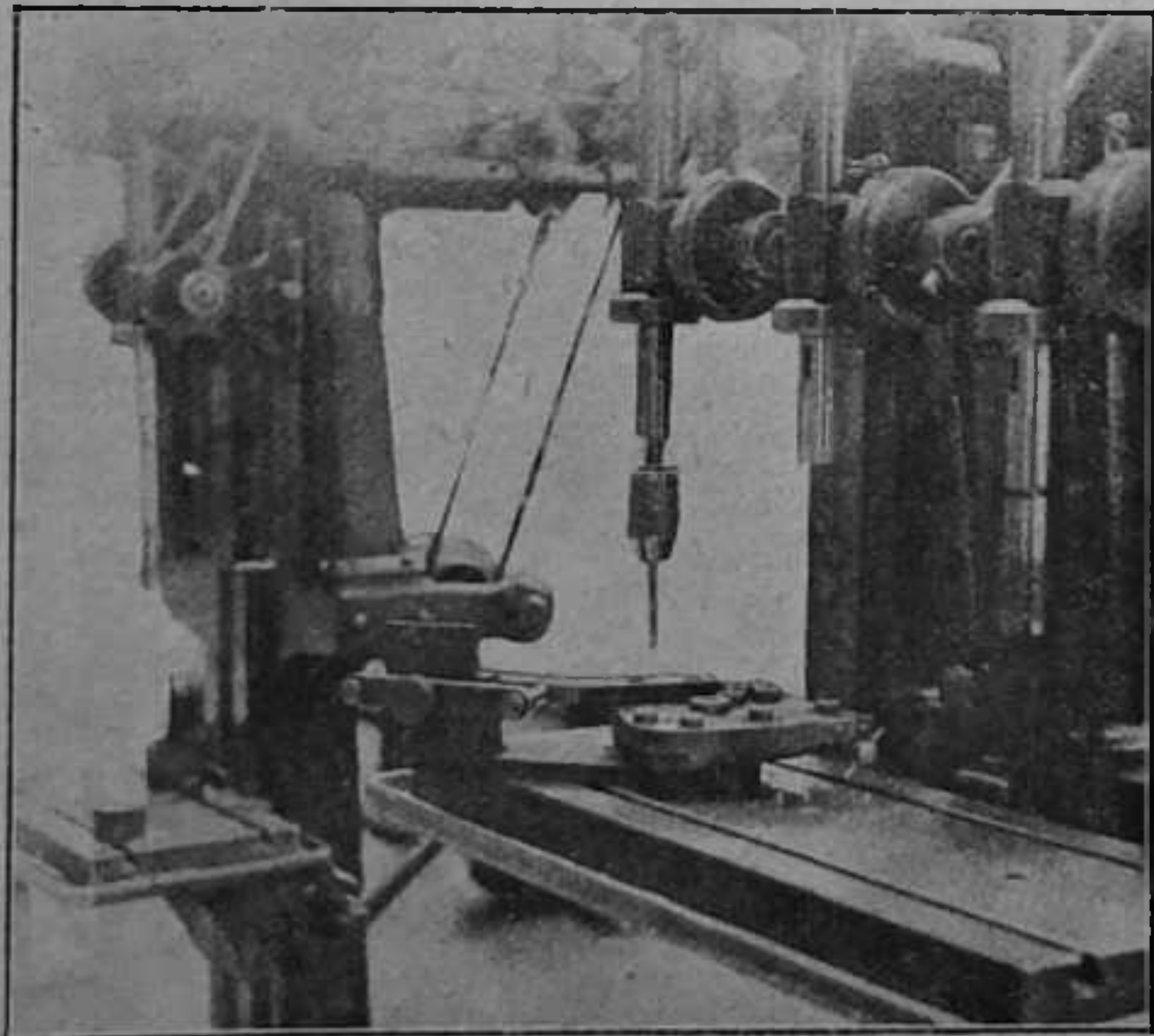


Fig. 2.—Drilling the bush holes in the cover. Note the jig through which the drill passes.

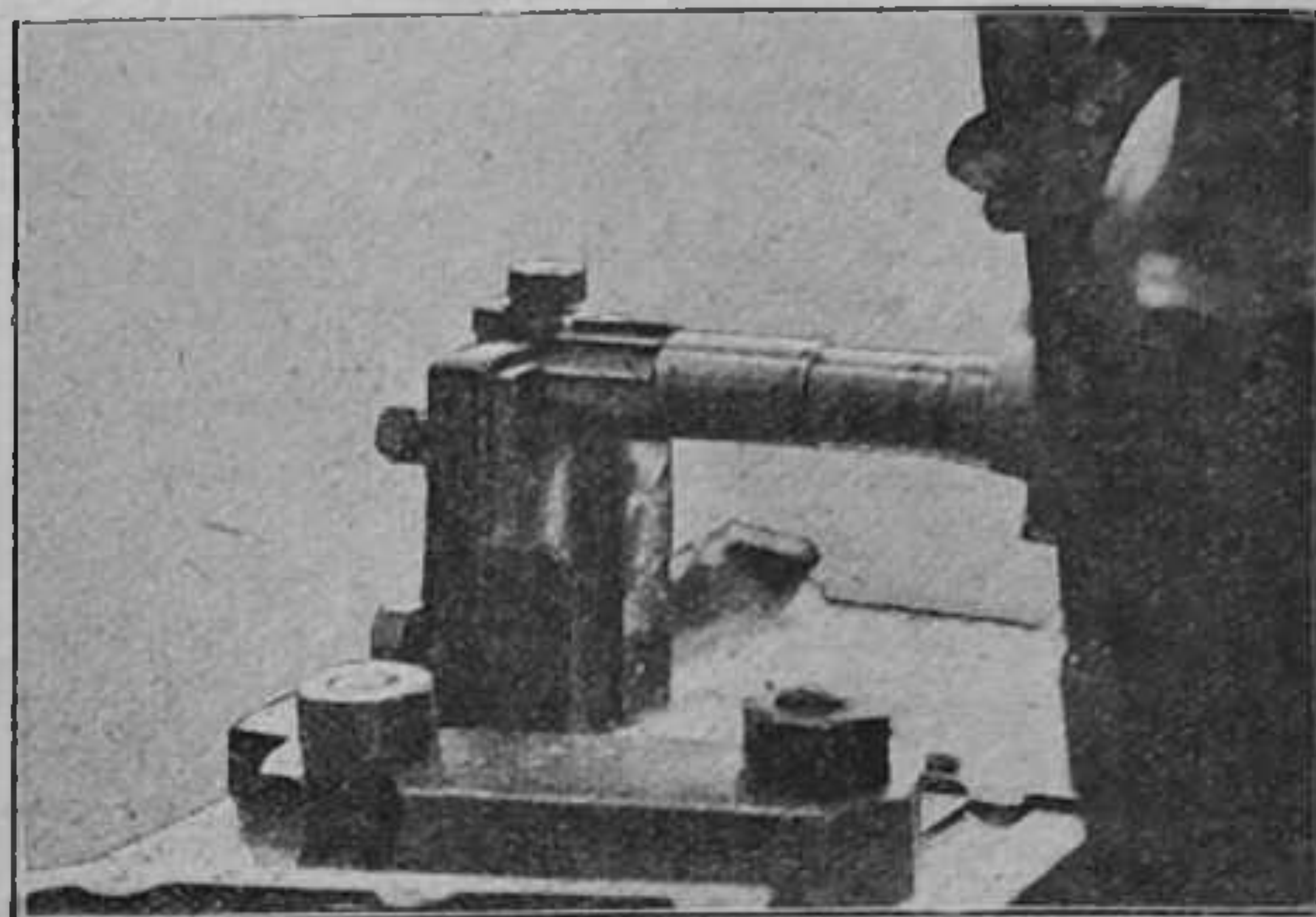


Fig. 3.—Milling the platform on which the magneto is carried. Reference should be made to Fig. 4 to appreciate which is actually the platform.

drills the necessary holes in the cover. Special attention should be drawn to the jigs which are in use, and which are clamped to the face of the case in order to ensure accuracy and, at the same time, assist in the rapidity of operation.

The magneto platform next receives attention. A perfectly flat surface for the magneto to stand upon is essential, and milling operation is necessary to ensure this.

In Fig. 3 a magneto platform is shown mounted up in front of a milling cutter, the platform travelling up and down, backwards and forwards, so that the cutter travels all over the face of the platform and finally leaves a perfectly flat surface. In Fig. 4 the magneto platform is shown being drilled in four places to accommodate the attachment bolts of the



Fig. 4. Drilling the magneto for the attachment bolts.

The Manufacture of a Motorcycle Power Unit (contd.).

magneto. A jig is again employed (and is clearly shown) in order to locate the four necessary holes, and, in the illustration, is shown clamped to the milled face of the magneto platform.

Polishing is the next process, this consisting of pressing the part up against a series of leather-covered discs, which are rotating at a very high speed, having first been impregnated with emery powder of various grades—coarse for the start and

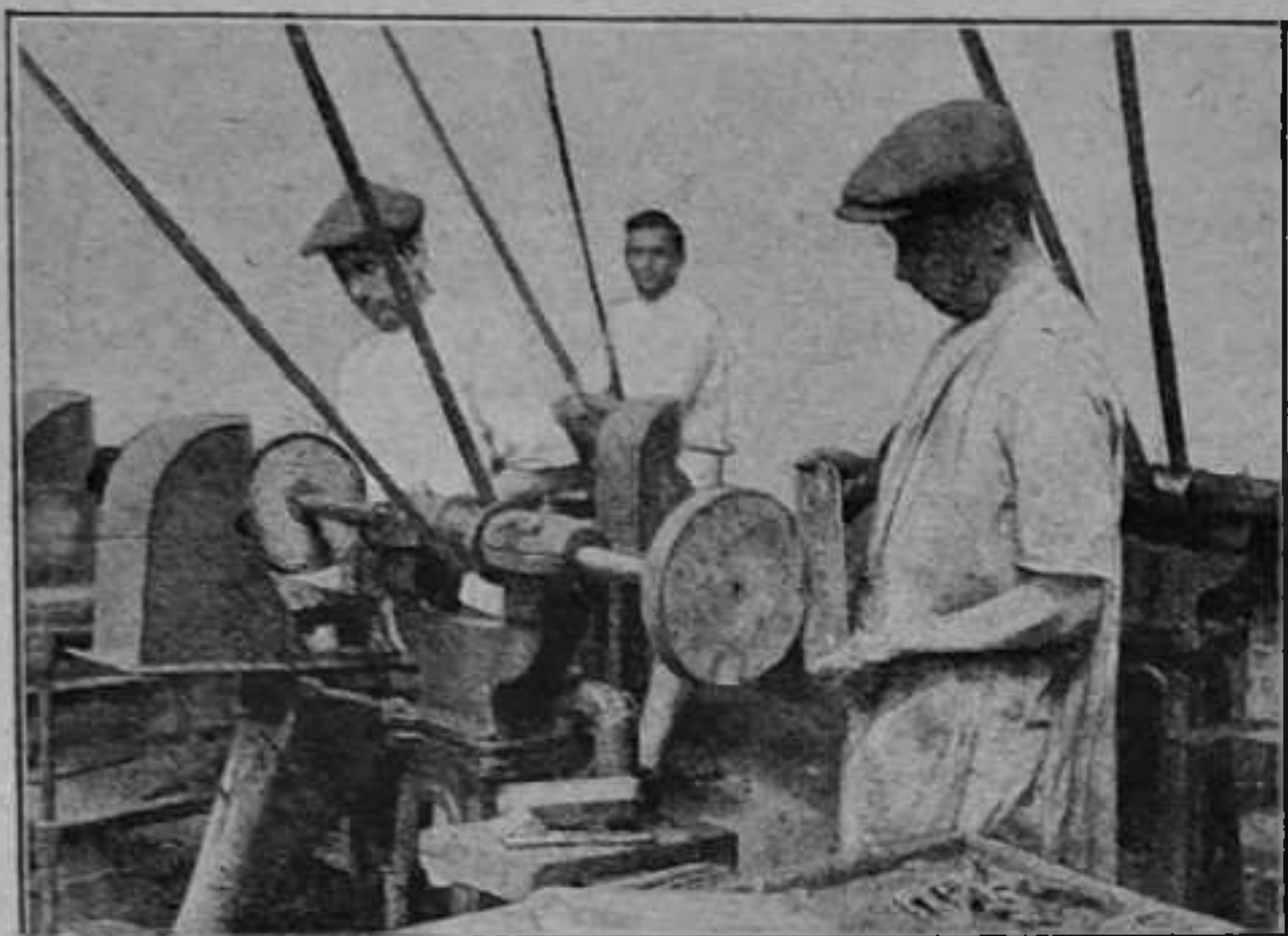


Fig. 5.—Polishing the aluminium chain cover; the valve mechanism cover is also polished.

fine for the finish. This is shown in Fig. 5, in which a chain cover is shown being polished.

All grease and dirt are now thoroughly removed and the parts taken to the nickel-plating bath (Fig. 6). This process, which is too lengthy a one for us to proceed with here, will be described in detail in a subsequent issue. After a sufficient coating of nickel has been obtained, the timing case cover is finally polished on a rotating calico disc covered with a polishing compound.

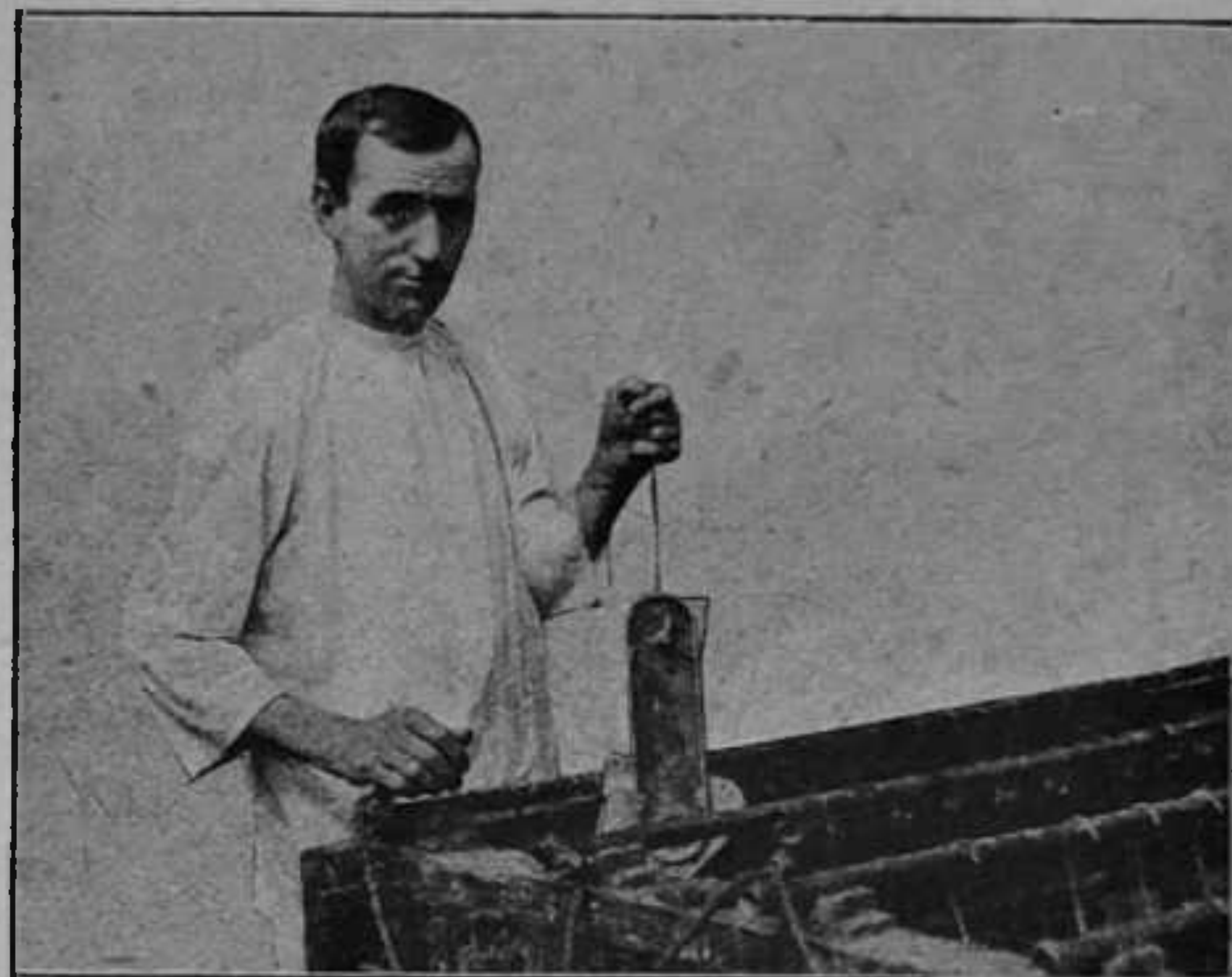


Fig. 6.—Dipping the part into the nickel-plating bath.

FOLLY AS IT FLIES.

Wanted, three-wheel runabout, combination, or variable free motorcycle; cash waiting.—"Liverpool Echo."

Charitably-disposed owners of fractious machines should not let this opportunity slip.

Triumph, 1916, magneto, spring forks, splendid condition, £15.—From a contemporary.

In default of other explanation, we fear we can only dismiss the last statement as an exaggeration.

From a contemporary:—

Wanted, Grand Prix Morgan, immediately, will give well-known 1913 light car, two motorcycles, a tricar, and a Dennis car, and perhaps some cash; light car worth £70; bring Morgan along.

Special traffic arrangements are in course of completion.

For sale, 6 h.p. Rex-Duplex motorcycle, with Mead-Beacon sidecar, only done 2500 miles, in good condition, pinion seat attached, selling through ill-health, price £47 10s.—"The Exeter Express and Echo."

Specially recommended to all those suffering from sidgetty flappers.

Rover, 3½ h.p., i.e., T.T. bars, new tyres, Senspray spares; in splendid condition.—"The Courier."

We can only conclude that this remarkable word is a result of lack of space, and is a brief way of apologizing for there being no spares. We think the advertiser would have done better to sport another line.



Tyre Bargains.—New, slightly oiled, all sizes.—"South Wales Echo."

Very unfortunate.

WANTED, twin motorcycle; some power; coach sidecar; state particulars, make, price.—"South Wales Echo."

Modest.

1915 Sunbeam combination, tip-pot order, we guarantee, £60.—From a contemporary.

Possibly a utilitarian device, on the lines of the borough council tip-up soil cart.

From the "Cycles and Motors Wanted" column, "Birmingham Daily Mail":—

"Cob, 13 hands, honest worker; no further use."

Every London cabby will sympathize.

Harley-Davidson, late 1915, electric lighting, with sidecar; cost £25; complete with hood and screen; all in perfect condition; open to any inspection; £80.—"The Glasgow Herald."

The first-mentioned sum lud, perhaps, better here been left out.

From the "Dundee Advertiser":—

"The Great North Road from London to Newcastle is a veritable road-makers' triumph, and a pleasure to motorists and all who use them."

Voluntary war service motorists would have liked the last sentence put differently.

From a contemporary:—

"Bat-J.A.P., 1194, T.T., special overhead valve engine, three-speed gear and kick starter, T.T. and touring bars, nearly new heavy Kempshall, grey finish, very fast, very smart, in perfect order: £35."

The pioneer.

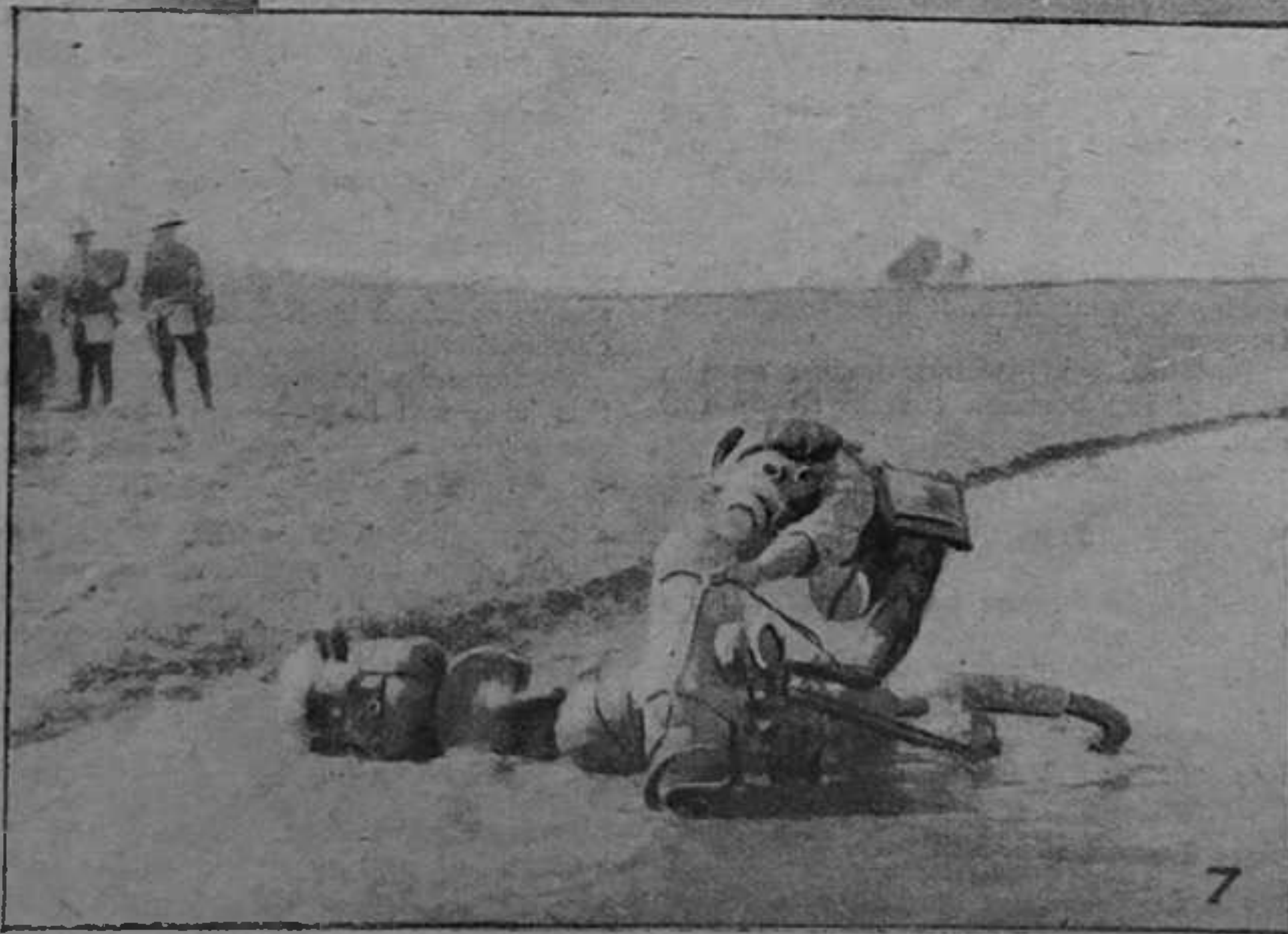
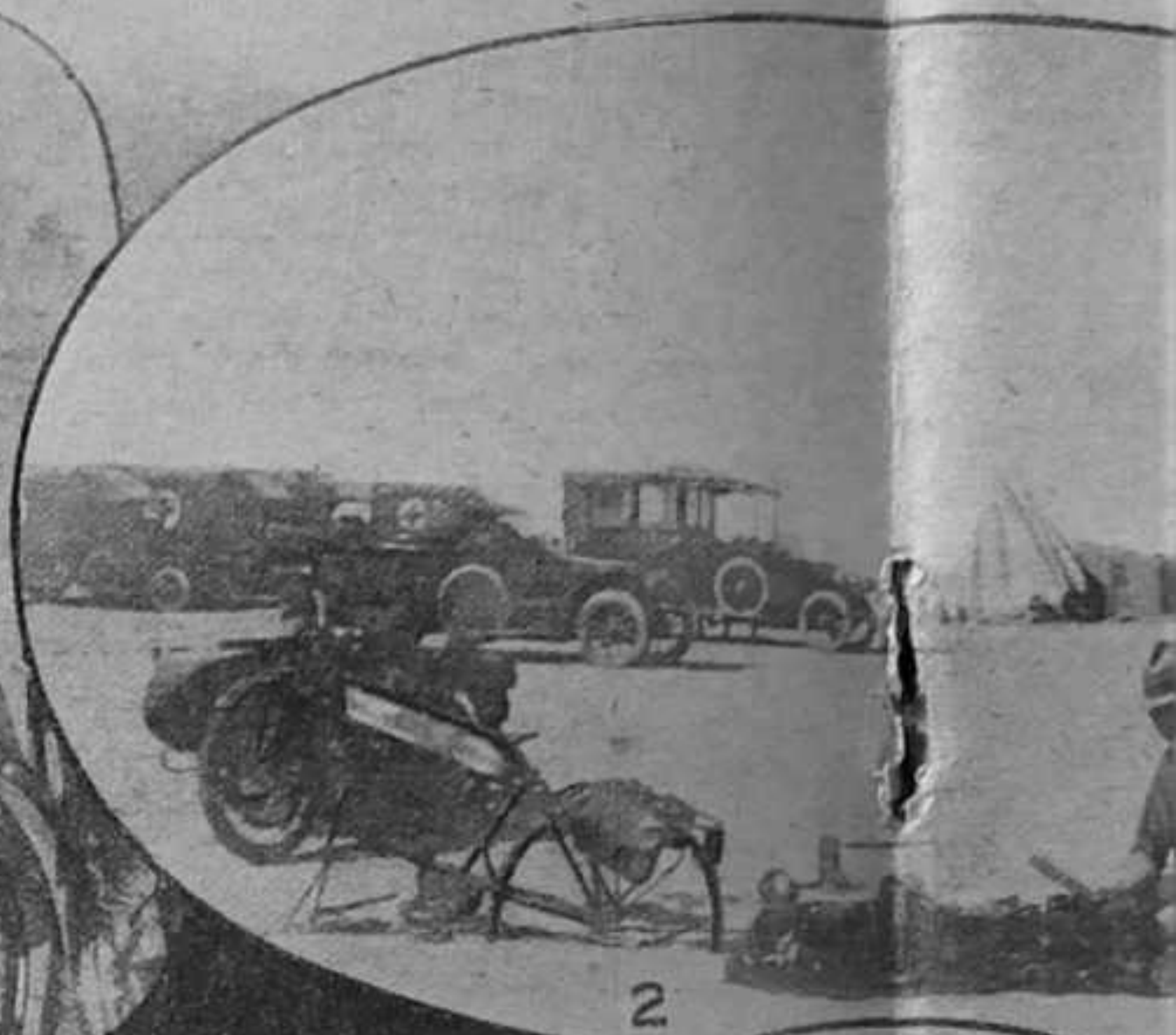
From the weekly Press:—

More Missing Machines.—"A two-cylinder 8 h.p. Bat-J.A.P. sidecar with dropped handlebars, Cowey speedometer, obtained by means of a worthless cheque."

Fortunately, an original machine of this kind will be quite easy to trace.

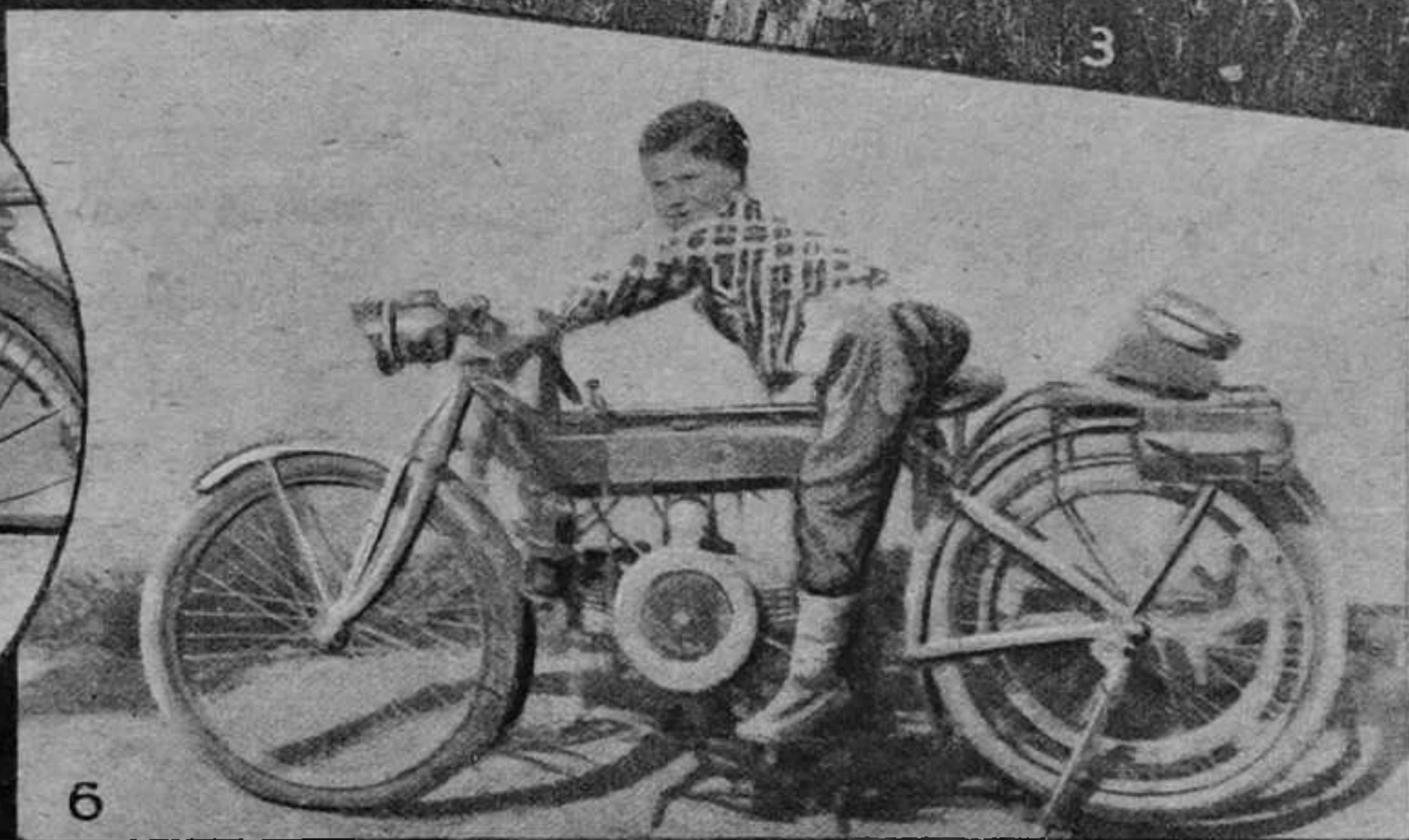
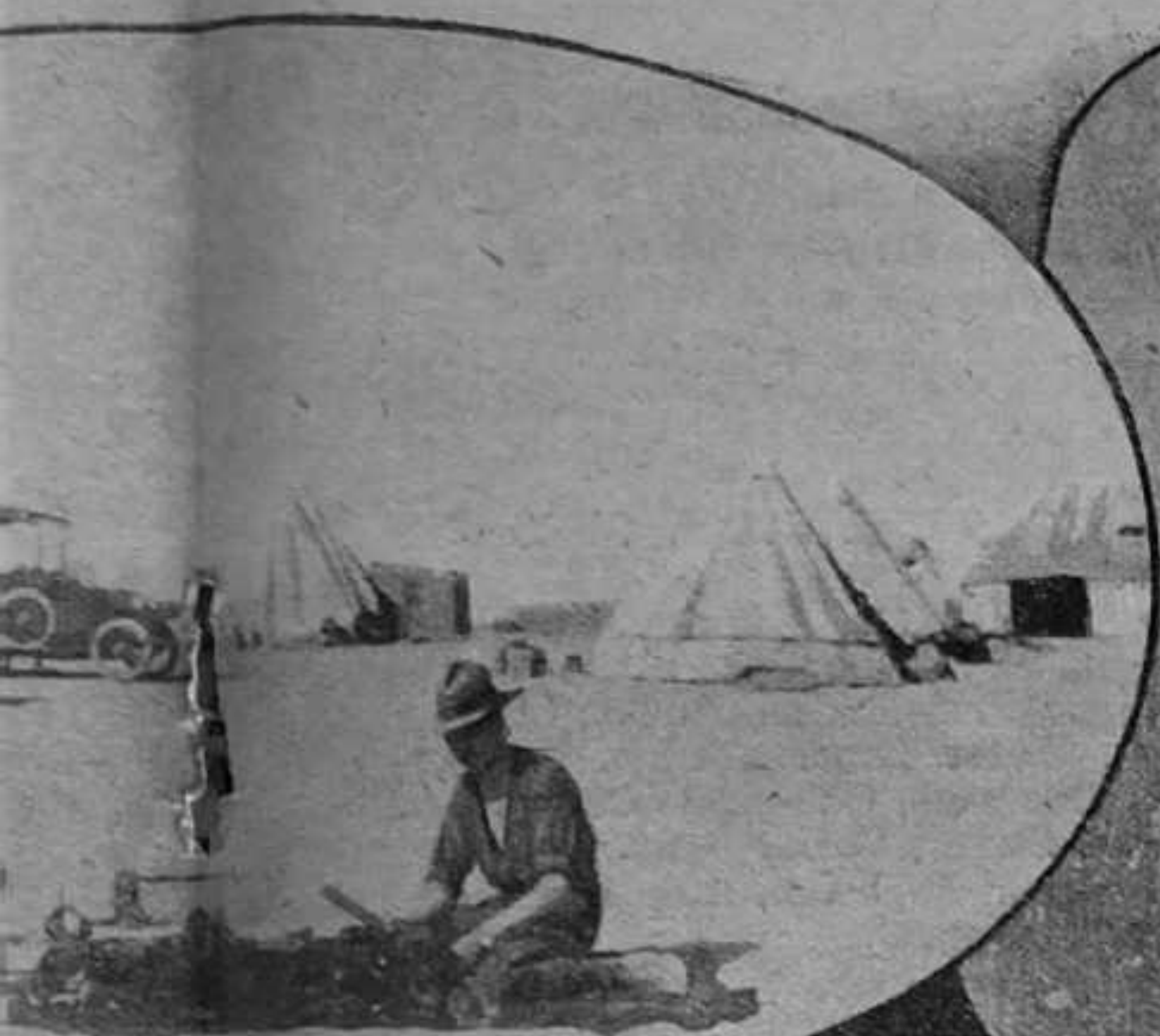
Not "Folly" But—

Commander Wedgwood's instructive article upon land settlement in British East Africa, which appears in the "Contemporary," contains an amusing footnote. Speaking of the Lake Choga natives, he says: "Some are still naked. The following story indicates how progress can be detailable. A Choga chief buzzed up to the post of his motor-bicycle, clothed only with a loin-cloth; he was followed by six perspiring wives on push-bikes, clothed in 'the altogether.'"



WHERE EXTREME Despatch Riders Amidst and Floods On the Sa

The above series of photographs depict in a graphic manner the extreme conditions under which the despatch rider attached to the Salonika work. It seems hardly credible that at one moment the plucky L next with desert sands. We think that even those D.R.s who have mud, and shell-pocked roads of Flanders will admit that it is pertain. The illustrations show:—(1) The typical conditions under and a Sunday's toilet. (2) An Anzac artificer working under any b of the desert. (3) An Anzac of the company in almost homely asso glory. (4) The floods, too, with which they have to contend do snowbound. (6) A native proudly poses as a "T.E. 1" in picture to rescue his Douglas from the flooded area. The enormous amount c in which this is stowed away, are of more than passing interest. (8) before attempting to ford a stream on his



EXTREMES MEET.

rs Amidst Snow, Desert
On the Salonika Front.

in a graphic manner the extremely arduous and widely-differing
er attached to the Salonika force has to carry out his important
t one moment the plucky D.R. has to combat with snow and the
even those D.R.s who have to battle with the vile pave, thick
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ne typical conditions under which the signals of this Army live,
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they have to contend do not lessen their lot. (5) Completely
as a "T.T." in picturesque garb. (7) A D.R. endeavouring
ea. The enormous amount of equipment carried, and the manner
re than passing interest. (8) Shows another D.R. testing the depth
ting to ford a stream on his machine.

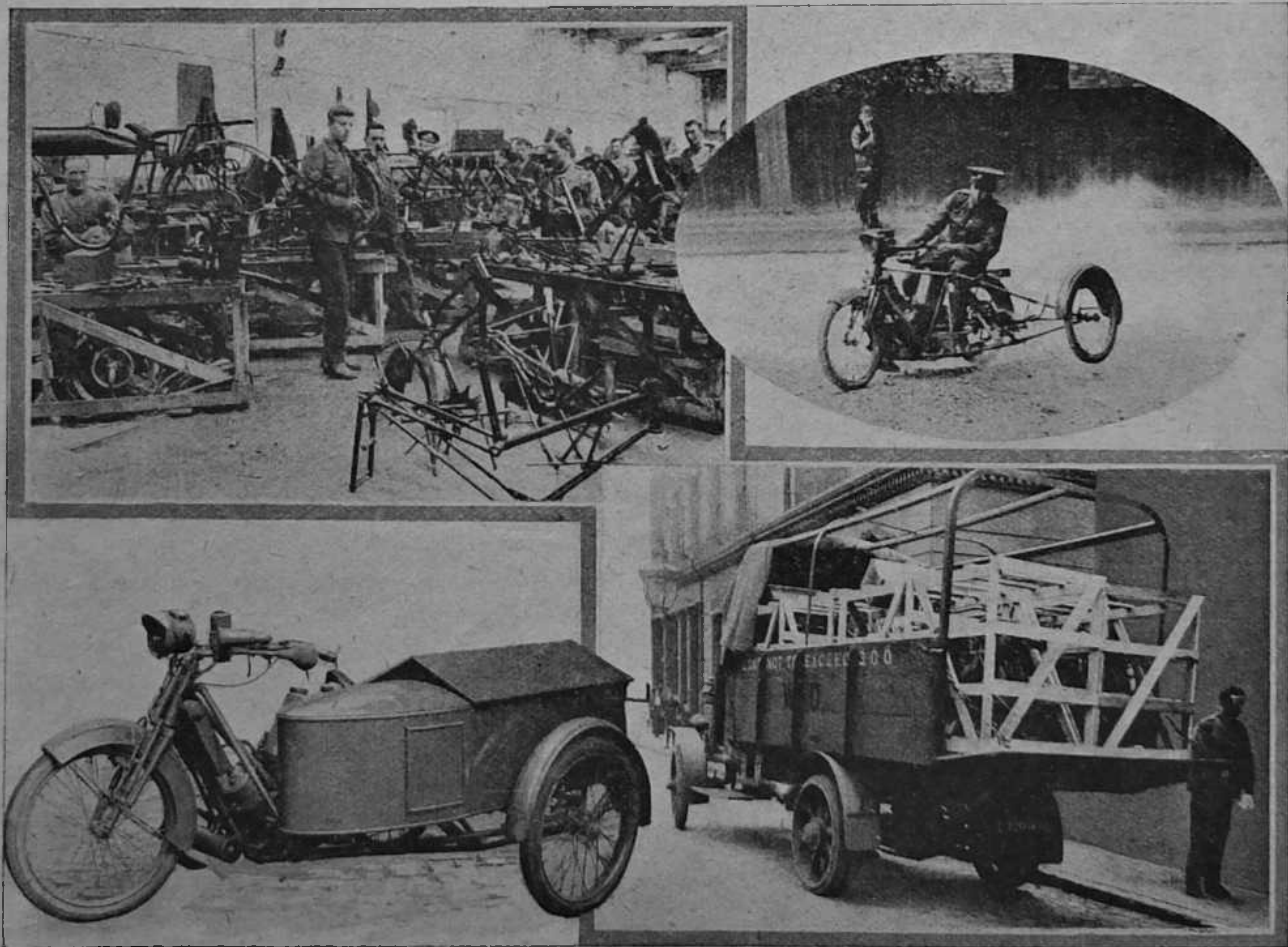


PETROL SUBSTITUTES.

For the convenience of our readers we republish our list of petrol substitutes.

We shall be pleased to publish a brief summary of the results obtained by our readers using any of the following fuels. These experiences should be accompanied by illustrations of the alterations from standard found necessary to obtain the best results. We cannot of course assume responsibility for the statements that may be made, but for the protection of our readers we shall require each contribution to be accompanied by the full name and address of the sender.

Name of Fuel.	Makers or Factors.	Name of Fuel.	Makers or Factors.
Aseo	... British American Oil Syndicate, 1, Albemarle Street, London, W.	Petroline	... Petroline Co., High Street, Cheltenham.
Arbeco	... Robinson Bros., West Bromwich.	Petrolior	... Petrolior Co., 28, Kingly Street, Regent Street, London, W.
B.M.G.	... Barnes Motor Garage, Barnes.	Relico	... The Reliance Lubricating Oil Co., Ltd., 19-20, Water Lane, London, E.C.
Binks	... C. Binks, Ltd., Eccles, Manchester.	Russelline	... Russell Oil and Chemical Co., 33, Adams Street, Birmingham.
Beatsol	... Alexander and Co., 113, Lothian Road, Edinburgh.	Thewal	... Thewal Motor Fuel Co., 158, London Road, Liverpool.
Force	... G. T. Harrap, 15, Budge Row, London.	Wertrol	... Werties Motors, Ltd., 7, Queensferry Street, Edinburgh.
Harwoods	... E. B. Harwood, City Garage, Far Gosford Street, Coventry.	Wital	... Wital Motor Fuel Co., 57, Moorfields, Liverpool.
Halls	... J. Hall and Son, Broadmead, Bristol.	"Petroline,"	Reid Bros. and Co., Ltd., Cleveland Road, Wolverhampton.
Hercules	... Hercules Motor Fuel Co., Blomfield House, London Wall, London, E.C.	Un-named	... Major and Co., Coal Tar Distillers, Wolverhampton.
Kempol	... Kemps Vulcanizing Co., 48, Hardman Street, Manchester.		
Little's	... Little's British Motor Spirit Co., Standard Buildings, Leeds.		
Petrofin	... Anglo-American Oil Co., 36, Queen Anne's Gate, London.		



Where war does not mean waste. Photographs taken at a certain repairs depot "somewhere in London." (Top, left) War-wrecked machines being repaired. In the foreground will be noticed the cycle frame of a Scott machine gun, which, when repaired, is tested on a local test hill (top, right). (Bottom, left) Converted into a War Office sidevan, and (bottom, right) being shipped off to the Front again.

THE EDITOR'S CORRESPONDENCE.

The Editor is not responsible for, neither does he necessarily agree with, the views taken by correspondents. Both sides of any topic are given equal publicity. A pen-name or initials can be given for publication, but the writer's full name and address must always be sent. All communications should be written on one side of the paper only.

OUR ANTI-GERMAN MAGNETO CAMPAIGN.

Difficulties that British Manufacturers Have Had To Overcome. Authoritative Letter from the E.I.C. Co.

We are extremely glad to state that the Editorial in last week's issue of this journal, dealing with the important problem of English v. German magnetos, has aroused extreme interest in magneto and motorcycle trade circles. The question is far too important a one to be allowed to drop into obscurity, and we trust that our "Anti-German Magneto Campaign" will have the effect of placing the British magneto trade upon the basis that it ought to stand.

WE notice with interest your editorial on page 452 of your issue of 26th September, wherein you mention that you are sorry to say that there is a spirit of stagnation with regard to the production of magnetos in sufficient quantities, and with such factors of reliability as will ensure that, after the war, German instruments will no longer be fitted to British motorcycles. We, of course, can only answer for ourselves.

We will first treat the spirit of stagnation, as mentioned. This, in respect to the E.I.C. Co., certainly does not exist. Our productive rate has been increased in such manner as to meet all demands for magnetos for single-cylinder motorcycles, and for over 18 months we have not failed to deliver in accordance with contracts, although the demands have increased at a great rate during that time. We have also machinery in motion for the enlarging of our capacity to meet after-war conditions. Difficulties in obtaining plant, buildings, and labour, as now exist, must, of course, be taken into consideration when you compare possible progress now as in comparison with pre-war possibilities.

Now in respect to your point re factors of reliability. For the first 12 months following the outbreak of war it was next to impossible to produce in this country magnetos possessing the degree of reliability that we should have liked them to possess. This was mainly due to the fact that many of the materials essential to magneto construction were not produced in this country prior to the outbreak of war. Therefore subsidiary industries had to be opened up for the manufacture of such materials. It naturally took time before such materials were up to quality required, and we may here mention that right from the start we used British material wherever we could obtain supplies of such material, although we knew such material to be inferior to that which we could have obtained from abroad. We took this risk from a purely patriotic standpoint, and that being so we could only expect to develop British sources of supply by supporting them. We paid high prices for inferior materials, because the firms producing such materials were British, and intended (providing they received reasonable support) to produce the right article at the right price so soon as it could be done. Experience was the only means whereby they could possibly be expected to succeed.

We supported them with our eyes wide open to the fact that we personally should receive all the kicks in respect to any shortcomings of the magnetos we were supplying. By following such policy, we are pleased to say that now we are able to secure all materials we require for magneto construction from British sources of supply, and of quality, already practically equal to that of foreign production. Further, in respect to this question of materials, we may mention that we have accepted full responsibility for any trouble which may develop through their use, and make it known to all users of E.I.C. magnetos that we repair free of charge any breakdown due to either that or faulty workmanship.

As to the reliability of the magnetos we now produce and have been producing for some 12 months past, there is no better evidence than the expressions of satisfaction from those who use them, and we have in our possession a very large accumulation of such evidence, both from the public and manufacturers, which we should be quite pleased to show you at any time. The solution of the whole problem is in the hands of the motor manufacturers if they will act in respect to magnetos as we have acted in regard to the question of materials for the construction of same; that is, be prepared to fit only absolutely all British magnetos, and say so now.

Then there is no possible doubt but what there will be ample supplies, and of right quality and quantity, to meet the manufacturers' demands when they return to normal business conditions after the war.

British workers can do equally as good work as German workers if they are properly handled and properly treated. British manufacturers can organize just as well as German manufacturers, if they have something to organize for. There is no lack of the progressive spirit in connection with magneto manufacturing, and there is no lack of determination to overcome the obstacles that exist.

It is not reasonable to expect that British magneto manufacturers have been able, during two years of war and extreme difficulties in respect to materials, labour, etc., to have been able to rise absolutely to the same pitch of perfection as the Germans did during about 18 years of peace.

We do not claim that our magneto is yet as good as the Bosch, but we are repeatedly told by those who use our magnetos that they are. That is better than we saying so and others saying otherwise.

THE ELECTRIC IGNITION CO. (1913), LTD.,

ARTHUR COX, General Manager

[The above letter sums up the situation in an extremely clear manner, and we trust that manufacturers of British motorcycles will follow out the suggestion made in our Editorial and repeated in the above letter, which is that a definite promise be given that no British machine shall be equipped post bellum with Bosch magnetos. This would act as a tremendous spur to the British magneto trade.—ED.]

Whatever other firms may decide we ourselves are determined to fit British-made magnetos. We are satisfied that the E.I.C. magneto is at least as good as the Bosch, and we have no doubt by gaining further experience in manufacture they will eventually be in a position to supply an article superior to the best German make. To say "it is not as good as a Bosch" is bosh. The proof of the pudding is in the eating, and our contract will go to the E.I.C.

VELOCE, LTD.,

J. TAYLOR, Director.

[We quite agree with Veloce, Ltd. The British manufacturer can turn out quite as efficient and reliable an article as his German competitor. What is required, however, is that this fact shall be definitely impressed upon the British motorcycle manufacturer. The campaign on behalf of the British magneto must be pursued convincingly and enthusiastically.—ED.]

Your Editorial "British or German Magnetos?" will surely have caused surprise to the number of riders almost out of touch with the trade at the present time.

I really expected that by this time, fully two years after the agitation for British-made magnetos, that these goods would be quite the standard fitting and that our manufacturers would be at least patriotic.

My present mount, an Enfield two-stroke, 14 months old, is fitted with a magneto named the M.L., which is, of course, of British manufacture; I have used the machine every day and have never made the slightest adjustment to the magneto. This is better service than I received from any of the Bosch instruments fitted to the three previous two-stroke machines I possessed.

R.A.M.C.

Correspondence (contd.).

Recognized Records.

Surely your list of A.C.U. recognized records requires some slight revision. I was under the impression that the flying five-mile sidecar record (500 c.c. class) was held by Mr. O'Donovan and his Norton, with 58.78 m.p.h., compared with the 58.06 of the Triumph. The same holds good in the case of the 750 c.c. class five-mile sidecar record, and even in the 1000 c.c. class five-mile, 58.10 m.p.h. is the nearest approach to the Norton's 58.78 m.p.h. I must add my appreciation of "Comforticus's" article in a recent issue. Needless to say, I am not in absolute agreement with him. I do not expect any two motorcyclists ever were in that state regarding the specification of their ideal mount.

Why did he put such a delicate lamp as the late Fallot on an unsprung portion of his frame, i.e., the forks? I had quite enough trouble with pastille breakage when my lamp was in a better insulated portion of the machine. Could not MOTOR CYCLING arrange a compulsory trial for motorcycle manufacturers out here? Fifty miles per day for a week would ensure great improvements in our post bellum machines, I feel certain. Our sense of engineering propriety and neatness would no longer be offended by the sight of front forks handaged up to render the machine rideable on grease; hubs hidden behind impromptu shields to keep mud out of the ball bearings and mudguards with about $\frac{1}{2}$ in. clearance from the cover. Engines are reliable to a degree, but some people want their attention drawn to sundry big details. A. LINDSAY, Capt. R.A.M.C.

B.E.F.

*[Our reader is correct. Mr. O'Donovan holds the records mentioned. A correction appears in our last issue. The figures published by us were those supplied by the A.C.U.—Ed.]

5200 r.p.m. on Second Gear.

We would like to point out one little error in your very interesting description of a run on an A.B.C. motorcycle, and this occurs where your correspondent states he was rather sceptical about the machine doing the high speed on second gear that the writer stated was possible.

Your correspondent proceeded to test this, and goes on to



ANOTHER WAR-TIME WORKER.

A butcher of a London suburb employs a woman war-worker to drive his 4 h.p. Bradbury sidevan, delivering orders to his customers. Note that the butcher boy's time-honoured observance of not wearing a cap is upheld.

[Dallas.]

say:—"Still on second gear, the throttle was opened to its fullest extent, the engine speed passing from a burble to a roar, and from a roar to an almost unimaginable scream of explosions, and up and up went the speedometer until the 40 mark was touched. Although this is astonishing on a gear of 6 to 1, a more astonishing thing was that it kept it up lap after lap, and with no falling off of power or speed."

As a matter of fact, the second gear ratio is not 6 to 1, but considerably lower, being 10 to 1, and as is easily seen from the speed he reached, the revs. under load were something over 5200.

On a gear ratio of 6 to 1 the machine is capable of 58 miles per hour. We trust you will find space to correct this in an early issue.

A.B.C. MOTORS, LTD.,

GRANVILLE E. BRADSHAW, Chief Engineer.

"Of Interest to Elderly Motorcyclists."

In the last issue of MOTOR CYCLING I find an interesting article under the above heading. "Palaia" says "it is difficult to obtain any experience of older riders." I do not know if I am to be counted amongst the "olders." A good deal depends upon "Palaia's" own age. When we are 20 we are apt to think 60 old age; when we are 60 some of us think we are in our prime. I commenced cycling on a bone-shaker and have cycled since. In a few months I shall have reached my 60th birthday. So, if you think this letter worthy of insertion, your readers can judge for themselves. My first experience of motor cycling was four or five years ago on a $3\frac{1}{2}$ h.p. single speed. I found it was too fierce and did not follow it up. When the war broke out my son (Cyril Williams) had the war fever very badly, and did not rest until he had joined the Army as a despatch rider, leaving me to look after his motorcycle depot. He was at home on leave the early part of 1915, and said, "Father, why don't you start motor cycling? It would help you to sell motorcycles." Soon after I had several tries on a two-stroke, but did not manage the starting to my satisfaction, so practically gave up riding; my trouble was the rather high saddle position. A few months ago my son was at home on leave and used a Levis to run about on. When he was going away he urged me to have another go at motor cycling. I am pleased to say I did, and have found much pleasure from it, not to add that I feel 10 years younger. I am riding a Levis Popular, which I find very easy to start and manage. At first I used to start by paddling off, but Nature having allotted me short legs I found this not very comfortable. Now I run along and jump on. Personally, I think it is an ideal mount for elderly persons to potter about on at any speed from four to 20 miles per hour. After the petrol and oil are turned on the only things that require attention are the carburettor levers and the brake. After a few months practice I feel quite as safe and comfortable on my Levis as on my Enfield bicycle. I hope you, Sir, will not think I am trying to give a free advert. for the Levis. I mention the make because it is the one I have been riding. There are other makes suitable for elderly riders. The point I wish to impress on these is to choose one low enough that one can paddle off, and, above all, that it starts easily. Semi-T.T. bars preferred because they give so much more control in steering than upturned. I do not agree with "Palaia" when a combination is recommended for commencing with. I have tried machines with and without sidecars. The steering of a solo is practically the same as an ordinary cycle. With a sidecar the steering is different, especially round a left-hand turn. I am inclined to think the future of the two-stroke lies more with the elderly than the young, and as an introduction to the full joys of motor cycling in the form of a first-class 6 h.p. combination.

GEO. WILLIAMS.

Chapel Ash Depot, Wolverhampton.

Re Paraffin and Plugs.

I see from "Cooee's" article in your issue of the 26th inst. that he has had some trouble with his plugs when running on paraffin. My experience is that when running on crude paraffin or on even a half and half mixture it is much better to use a plug on which the insulation comes as near as possible to the point of the central electrode. A plug of this type will keep clean very much longer than one where the insulation finishes higher up the electrode. I can especially recommend from my own experience the Oleo and Lodge plugs when running on paraffin. Have any other of your readers had a similar experience? I need not say I have nothing to do with either of the concerns manufacturing the plugs mentioned.

STANLEY H. BURNS.

47, Kingsfield Road, Oxley, Watford.

A Victim of "Militarism" and Lack of Standardization of Controls.

I read with interest the various articles which appear each week in *MOTOR CYCLING*, and I have especially appreciated your efforts to obtain standardization of controls, but never so much as last week. I am called up for military service, and, being a keen motorcyclist, was desirous of joining some motor section. Last week I went to ——— to enlist as a motorcyclist in the Flying Corps, taking with me a reference from my employers to say I was employed by them for the purpose of adjusting and repairing machinery, also the supervision of workpeople, and that I was a capable man. Incidentally, I have worked for this firm for about three years as a machine fitter and overlooker. I was told by the Lieutenant in charge to go to a certain man in the yard to be tested for motor cycling; here I got my first taste of militarism. The man was in a violent temper at having to leave the job he was engaged upon, consequently I had to suffer. The motorcycle was brought out, and I was tested in trick riding, figures 8, and the like. Although I do not profess to be a trick rider I did not object to doing a bit, and got through all right. I was next told to ride once round the yard at slow speed and stop dead in front of my tester. As I approached the stopping place and about to declutch

and put on the brake, the engine almost stopped. Letting go the clutch lever to open the throttle a little more, owing to the operation being contrary to my own, I shut off the gas. I asked to be allowed to go round once more, but was told to get off. In answering other questions I could not get the man to take me seriously; he tried to make a joke out of all I said. I told him I did not consider that was a test for a motorcycle mechanic, and offered to take down the engine and reassemble it, but his only comment was to ask how many parts I would have left. The upshot of the matter was that he would not pass me for the Service. I may say that during my four years of motor cycling I have ridden numerous makes of motorcycles, and have done all my own repairs, never once having to leave my machine at a garage for repairs, which include the rebushing of engine and gearbox, fitting new crankpin, which, as you know, means taking the engine completely to pieces, truing the valves up, and several other things which are continually requiring attention.

DISGUSTED.

[The above letter, which is accompanied by the reader's full name and address, only reached us last week, although dated 5th September.—Ed.]

Home Tyre Repair.

Being an old reader of your valuable paper and having gained some useful information therefrom, I beg to inform you of an unfortunate occurrence that befel me and the way I overcame it.

If you think the hint worth while publishing in your paper it may be the means of helping some other motorcyclist out of a similar difficulty.

I own a 5 h.p. Indian and sidecar, and always after returning from a run I make a practice of having a general look round the machine on returning back to garage. I recently had the unpleasant surprise of finding that the wire of my sidecar tyre had come away from the canvas in several places round the tyre, it being a wired-on pattern. I thus saved myself a bad burst, the cover allowing the inner tube to protrude, by deflating as quickly as possible. It seemed a pity to scrap the tyre as it had not had much wear, so I set to work to repair it. The following will give you some idea how I managed it. I first obtained a fair amount of freshly manufactured wax end thread from the bootmakers—the thickest obtainable—not on the cards, as this may be stale or half rotten; then I obtained a bodkin needle, filed a point on it, also a bradawl, made a series of holes all round tyre about $\frac{1}{2}$ in. up so as to get a good hold on canvas and sewed the wire on strongly, making my stitches about $\frac{3}{4}$ in. apart. I next obtained a roll of patching canvas and cut into two longways, leaving the strip about $1\frac{3}{4}$ in. wide, and cut to length a little longer than the circumference of wire. I then solutioned both cover and canvas well, allowing them to get nearly dry, then overlapped them equally inside and out,

making a very good repair. It is necessary, however, to make the exposed canvas watertight. To do this I bought a stick of chatterten from an electrical shop, melted same down in a tin and applied it to the outside canvas with a brush, being careful not to get any where the inner tube is likely to touch it. I then made a soldering-iron hot and well soaked the canvas, thus making it perfectly watertight; the tyre is now fit for at least another 2000 or 3000 miles at the cost of a little outlay and trouble. The sketch will show how the repair was done.

Bad cuts can be repaired in the outer cover by cleaning them thoroughly and melting some chatterten into it, smoothing it over with a wet finger. A small piece of chatterten can be carried in the toolbag, and a good repair effected on the road with the aid of a lighted match. W. H. STRINGER.

116, Dalmally Road, Croydon, S.E.

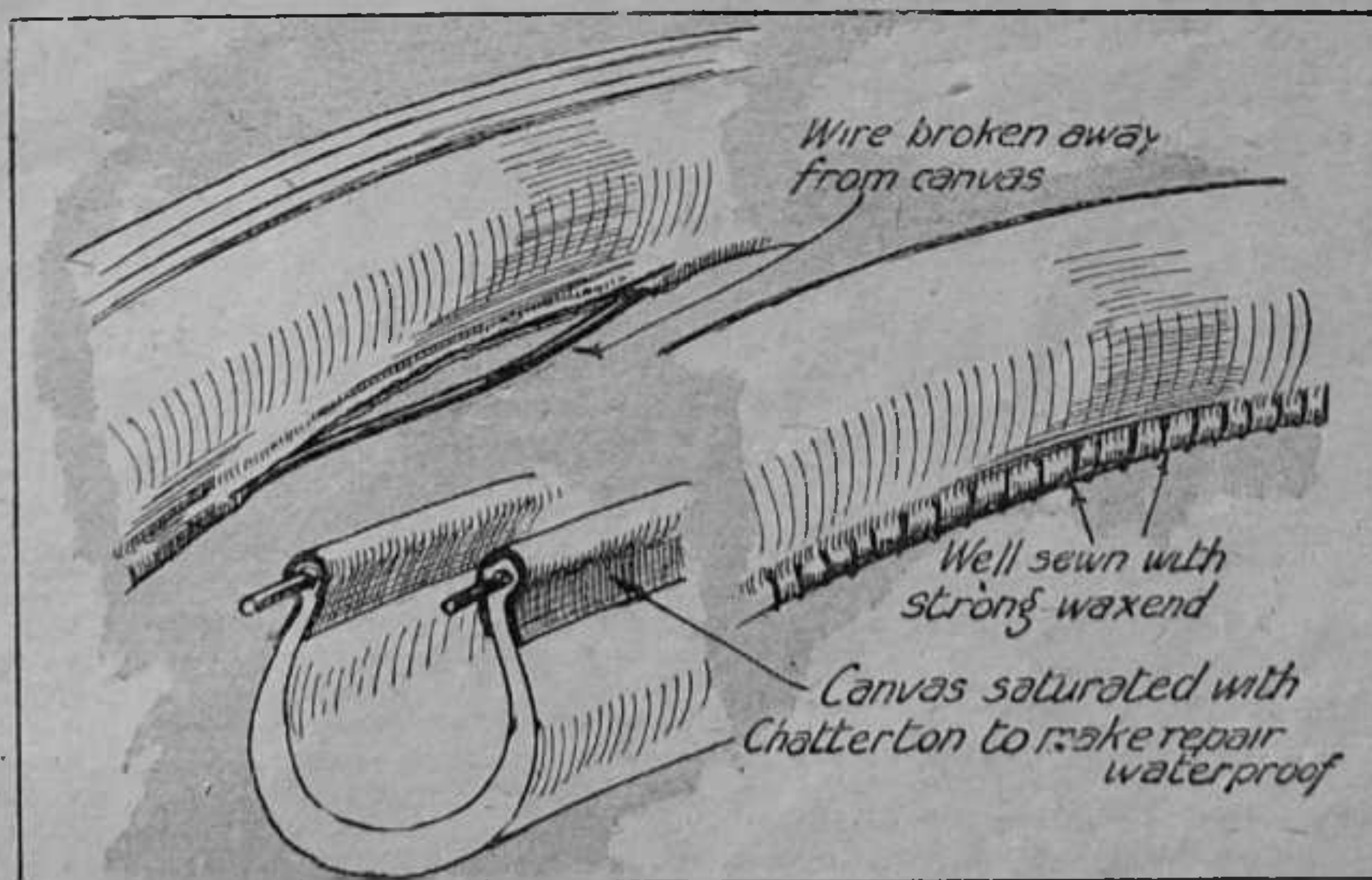
In Answer to a Query.

Re "P.C.P.'s" inquiry about the "Cambridge" power unit. The Cambridge Automobile and Engineering Co., Ltd., Hobson Street, Cambridge, made a $3\frac{1}{2}$ h.p. single-cylinder model (some years ago) called the "Caeco," from the firm's initials.

For its "date" it was very fast, probably one of the speediest "buses" in the world. I believe aluminium alloy pistons were fitted to one or two models.

The firm may still have spares on hand; the machine was, however, dropped for some reason or other about 1912-13.

CE3812.



Repairing burst beads.

Correspondence (contd.).

Volunteer Training Corps.

I notice in last week's issue of *MOTOR CYCLING*, under "News and Jottings," that motorcycleists are required for the Essex Volunteer Regiment (Motor Section), and I should be glad to know if there are any organizations of this kind in or near the south of London. Thanking you in anticipation.

Surrey.
[We are unaware of any such body. If extant, we should be obliged if the organizers would forward the address of the headquarters.—Ed.]

Vagaries of Two-strokes.

Your correspondent, "Experimentia Docet," must have been very unfortunate in his choice. I am riding a 2½ h.p. two-stroke, two-speed, chain drive Excelsior, and am delighted with it.

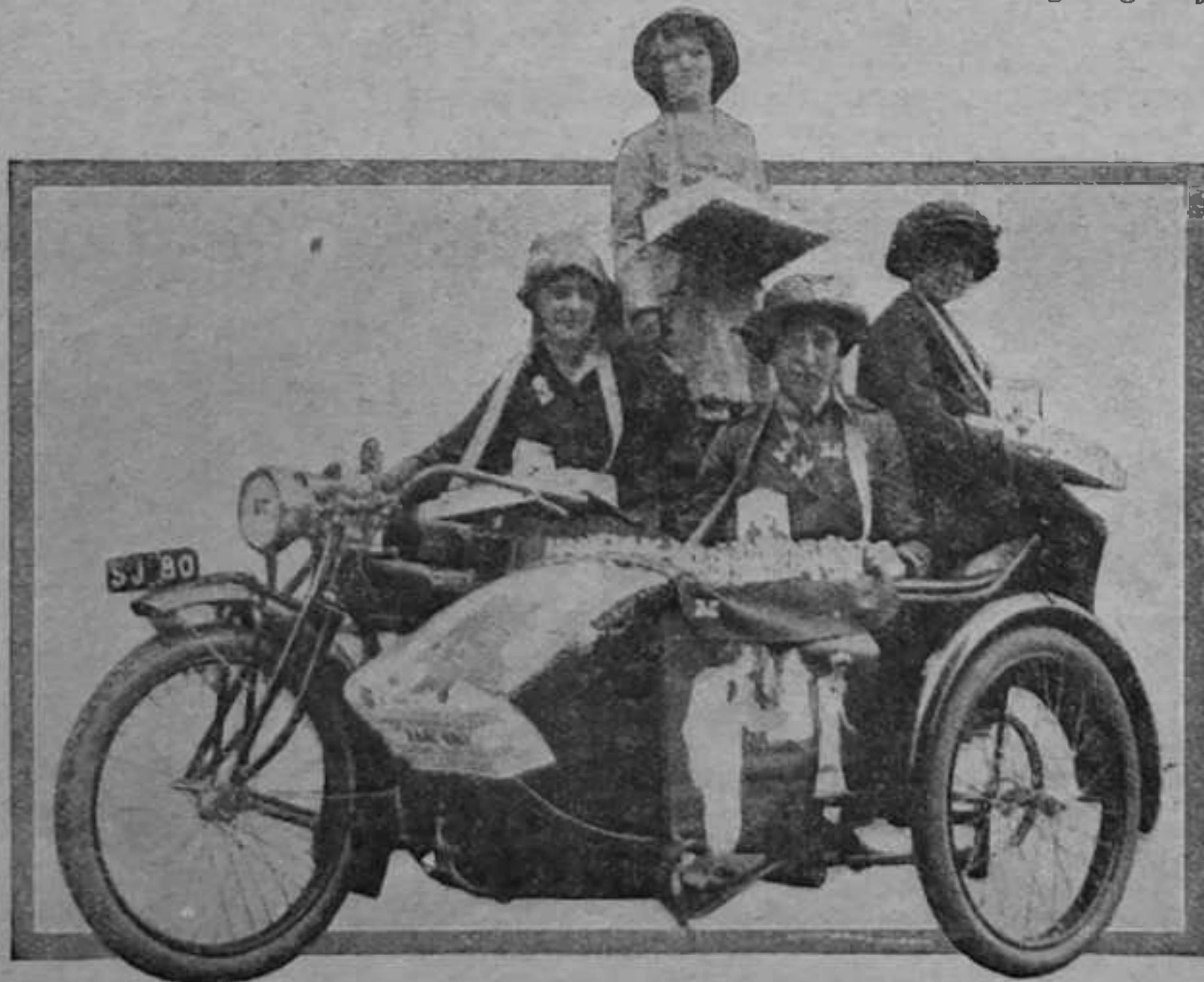
The machine starts easily within half-a-dozen yards on a mixture of petrol and substitute, maintains splendid speed on one-third throttle, and laughs at most hills. While riding solo I have not had to change down but once, and get well over 100 m.p.g.

There are other makes quite as satisfactory for solo mounts.
4, St. Mary's Road, Eastbourne. A. C. CROUCH.

A Peculiar Cause of Engine Stoppage

Perhaps you would be able to find space in your correspondence columns to publish a most peculiar cause of stoppage. I have been in hospital nearly three months now as the result of a collision with a lorry on 1st July, and so have had time to reflect upon the many hairbreadth escapes and various troubles which I experienced in France. But the particular case I have in mind was when I had to take a motorcycle and sidecar about 40 miles. I had got about 15 miles when it began to misfire, and finally petered out. I flooded the carburetter, and the machine would then travel about 10 yards and no more. I "went over" the ignition, valve timing, and every conceivable examination, as also did my passenger (a corporal in the M.T.). Well, I will now explain the simple cause of the trouble. The jet had a rubber washer, as packing, and a small portion had found its way into the jet, which acted as a valve. For several times I blew through the jet, and it was apparently clear, but as soon as the petrol entered it it caused the piece of rubber to rise and so close the orifice. Perhaps some of your readers have had similar causes of stoppage, and have been at a loss to diagnose them. With best wishes for the continued success of *MOTOR CYCLING*.

H. E. LEACH, R.F.C.



Some well known lady motorcycleists who acted as flag-sellers on a recent "Flag Day." Miss Lottie Berend (driving), the Hon. Judith Denman (standing on the pillion), Miss Goskyl Pearson (sitting on sidecar back), and Miss Tyrhitt Drake.



Owner of Crock: "I'm afraid it's rather out of date, but—" Harassed Garage Proprietor: "Out of date! Why, it must be Group B.C. 81, and it ought to be totally exempted."

What is the Proper Position to Ride on the Roads?

Your correspondent, Mr. E. G. Selman, asks why motorists prefer the centre of the road. My reason—as a motorcycleist who prefers the centre of the road—is that a better view of roads on the left-hand side is obtained.

If one rides close to the kerb and a vehicle suddenly comes out from a left-hand turning, you are so close to it before you see it, that it is almost impossible to swerve round it, whereas when one rides in the centre of the road the vehicle is seen earlier, and a much better chance of avoiding it is obtained.

Incidentally, whilst on the topic of roads and corners, there is a big percentage of road users who come out of minor roads into main roads at a far greater speed than they ought, and never by any chance give way to the main road users, which, I believe, is one of the laws of the road.

The worst accident I ever saw was caused through a car coming out of a side turning on the Portsmouth road and not giving way to a sidecarist using the main road, which the car ought to have done; two people were killed in the above accident. The authorities ought to have the laws of the road printed and posted up for everyone to see.

KENNETH V. CHIDLEY.

"Myrtle Cottage," Beltinge, Kent.

Training Motorcycleists for the Services.

With reference to your answer to your correspondent "L.W.C." in your issue of 26th ult., I beg to inform you that, having obtained my release from the Army, I am specializing in training prospective recruits for the motor-cycling sections.

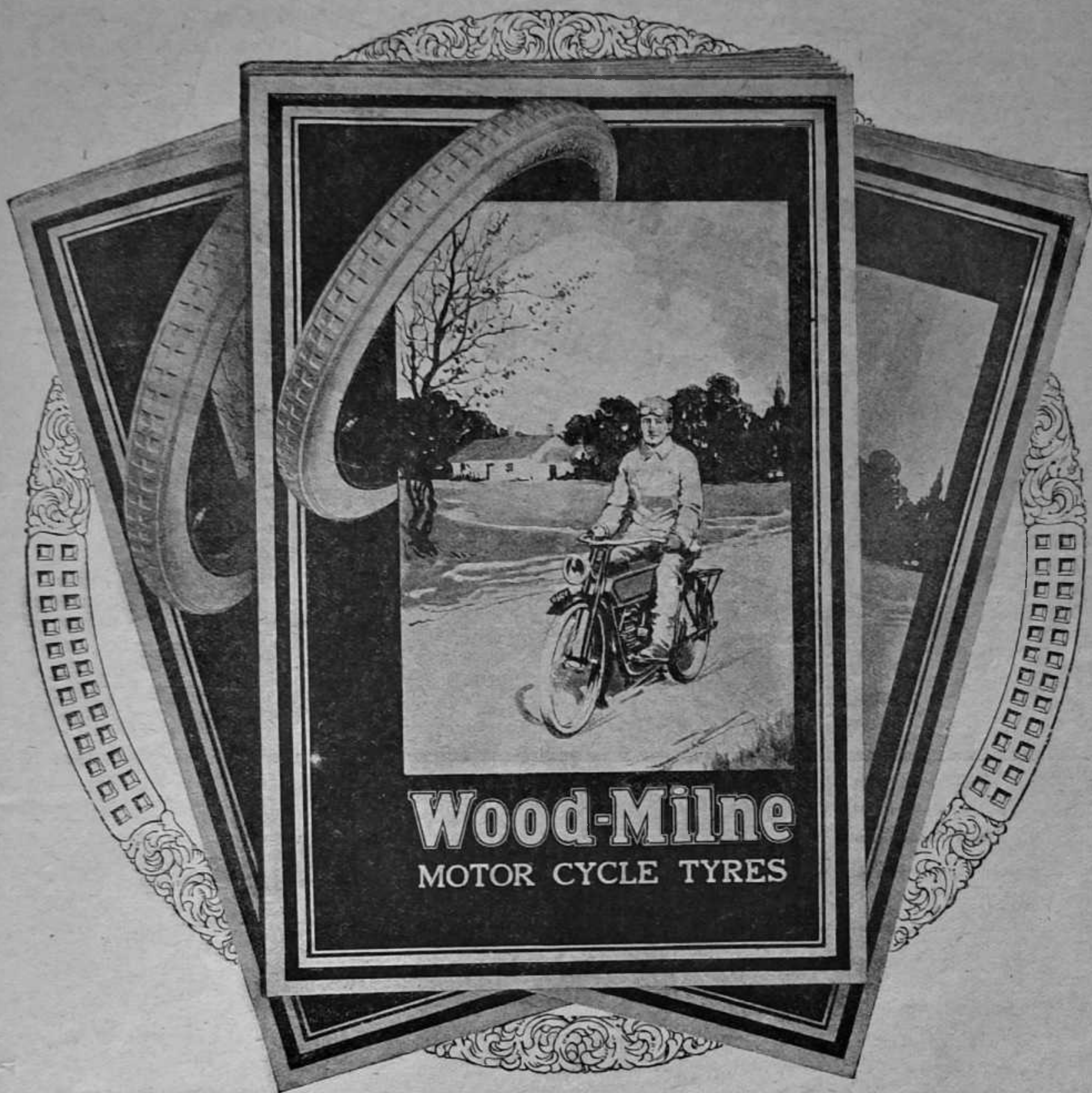
Should your correspondent require motorcar driving lessons as well, these could be arranged.

H. LOCKE.
Automobile Engineer and Consultant,
57, Mauldeth Road,
Withington.

Petrol Licences.

As an item of interest, I feel I must tell you that my petrol licence came three days after the postal order was sent. The allotment (six gallons in three months) came on the Monday, and the licence the following Thursday of the first week of this month. Judging by what I have read in your paper, I think this must be almost a record, and I think myself very lucky.

J. NORMAN BERRIDGE.



Write for a copy!

It will interest and
repay you.



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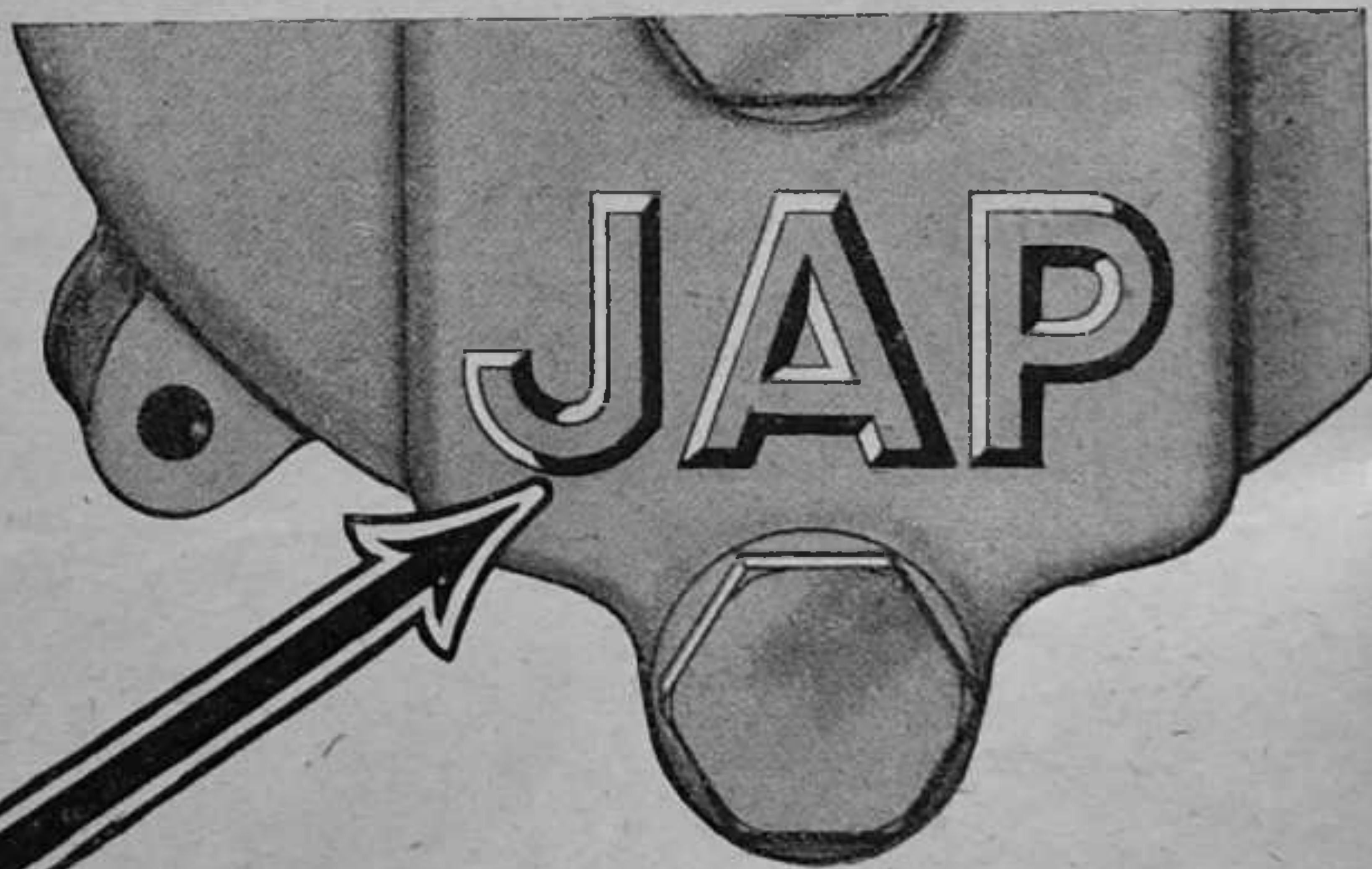
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INFORMATION & ADVICE.

Questions Answered through the Paper.

RULES—Questions on technical matters, advice in selection of a new machine, etc., will be answered in the next issue after receipt of the inquiry so far as possible. Letters or postcards must be marked "I. and A." in top left-hand corner. Questions must be numbered, and a copy kept for reference. Machines upon which an opinion is sought should be numbered. Replies can also be sent by post if a stamped addressed envelope for that purpose is enclosed. Routes and legal queries are answered only by post. Catalogues of motorcycles or accessories which will materially assist in the choice of a machine or its equipment, can be sent if two penny stamps are enclosed.

B.M.—The military authorities.

J.F.—From the list of machines, the Allon would be the most suitable.

J.N.—Yes; from the Triumph Cycle Co., Ltd., of Great Portland Street, London, W.

P.H.R.—You are in the position of many others. The only course that you can follow is to worry the Petrol Committee.

R.C.—We have been unable to obtain any Williamson catalogues. These machines are not now being manufactured owing to the war.

H.O.C.—Sorry to say we have no knowledge of any letter or contribution which described the making of an electric cigarette lighter from a bell push!

A.C.—The only concerns that we are aware of who hire out machines are Messrs. Maudes' Motor Mart and A. P. Rey, both of Great Portland Street, London, W.

R.E.H.—If proper vaporizing precautions are taken, practically any of the petrol substitutes are successful. We have heard excellent reports of Petroline, sold by Messrs. Reid Bros. and Co., Ltd., Cleveland Road, Wolverhampton.

L.W.A.—We are aware of cases in which the Petrol Committee, whose address is 19, Berkeley Street, London, W., have granted allowances to officers who have returned on leave, or who are discharged from further military service. You should, in the first instance, write to the Petrol Committee stating your case, and, if matters are not satisfactory, call upon them. At the present time you will not be able to obtain petrol without a permit.

T.M.—The racing oil we referred to was the special Castrol R.

H.W.P.—No; you cannot enlist in the R.N.A.S. as a despatch rider.

W.A.T.—As the machine is hopelessly out of date, we are afraid we cannot help you.

B.T.—It is impossible for us to give advice on second-hand machines as these differ so greatly in condition.

T.E.G.—Messrs. Brown Bros., Ltd., of 22-34, Great Eastern Street, London, E.C., will supply you with a suitable steel.

S.R.S.—We are unaware where you can obtain spare parts for Clyde motorcycle engines, as these have not been manufactured for a number of years.

63.—We should strongly advise the 25 $\frac{1}{2}$ h.p. Allon with clutch and kick-starter. It would be an excellent machine for you. Under the circumstances, we have pleasure in forwarding catalogue.

G.H.L.—If you are quite sure that the throttle slide is really opening, the jet must be choked. Can you actually see the petrol spraying through the jet? It may be that you have got the wires crossed, the air slide being connected up to the throttle lever.

P.F.F.—(1) The Scott Engineering Co., Ltd., Saltire, Shipley, Yorks. (2) Godfrey and Appleby, Great Portland Street, London, W., do a big Scott business. (3) Catalogues forwarded. (4) Binks carburetter works excellently. (5) We expect that the machine could be made up for you. (6) No. (7) See our second-hand columns.

T.B.—Yes; you can use 1 part of oil to 16 parts of petrol.

W.A.W.—We expect that the tube you refer to is the Searle Unburstable inner tube, the address of the manufacturers being the Searle Unburstable Inner Tube Co., Ltd., 6, Livery Street, Birmingham.

J.W.E.—The device was not proceeded with commercially, and the only motor attachment at the present time is the Auto-Wheel, manufactured by Messrs. Auto-Wheels, Ltd., 2, Russell Road, Kensington, W.

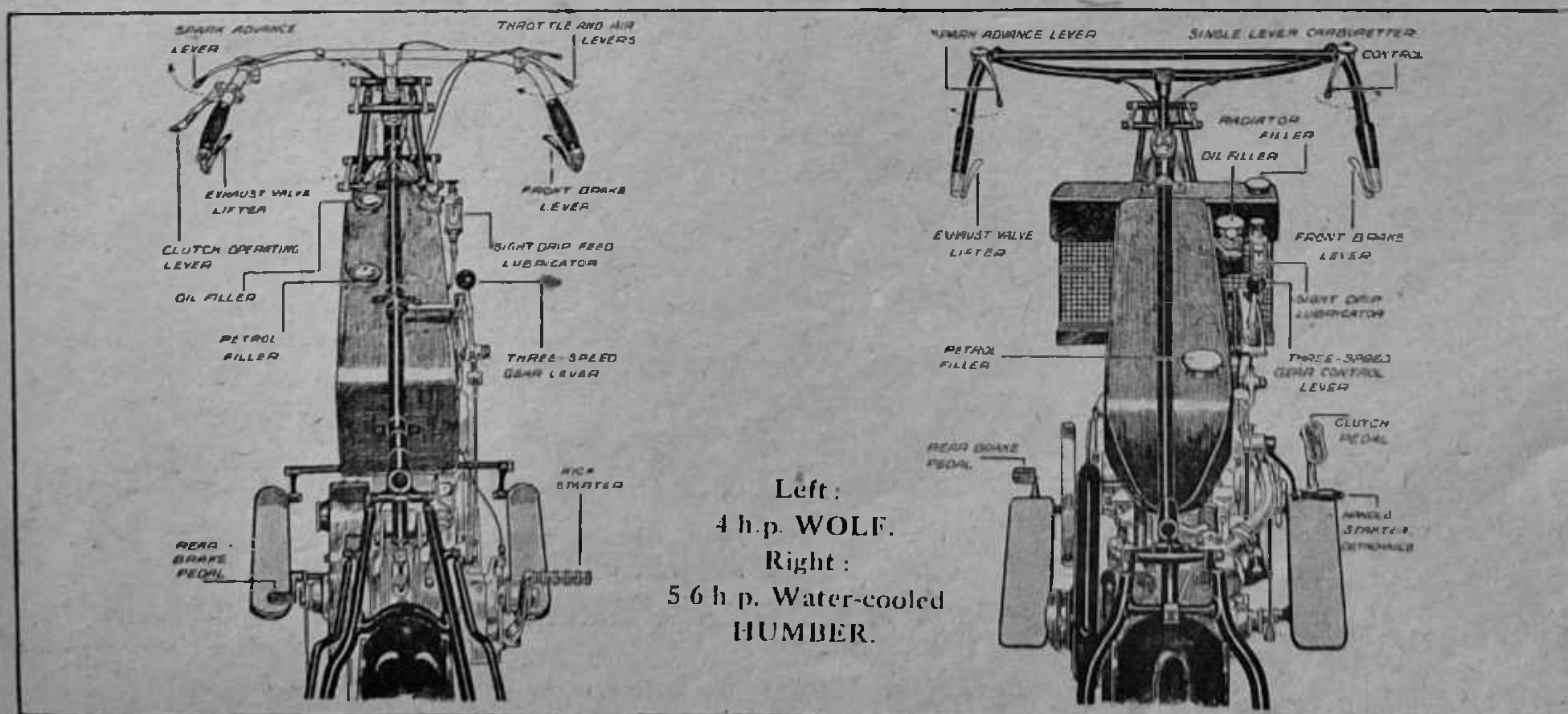
I.G.W.—Owing to the small clearance, we think it would not be possible to fit a decompressor into the cylinder head of a Judge Mott. If, however, you can obtain one, we expect that you will not have much difficulty in paddling the machine to start. We should advise you carefully to measure the clearance and write to the Service Co., of High Holborn, for a suitable decompressor, giving, of course, the measurement.

W.N.—Your only plan is to have the back wheel of your 4 $\frac{1}{2}$ h.p. sidecar combination rebuilt. The rim fitted to your machine will not accommodate nearly a large enough tyre considering the weight of the combination. The rim fitted should be the flat base or voiturette, and you will then be able to fit a tyre capable of dealing with the weight of machine and sidecar.

B.W.J.—In nearly every case the cause of failure to throttle down at low speed is due to air leaks. These occur past worn valve stems and guides, and at the point where the carburetter is attached to the induction pipe. In this case the carburetter should be closely bonnd with insulating tape, whilst special attention should be given to binding with insulating tape the point where the wires enter the body of the carburetter. The level should be fairly high and the ignition retarded. Naturally, the ignition should be in first-rate order, the platinum points cleaned, and the points of the sparking plug set closely together, whilst it is also essential that the compression should be good.

H.M.D.—Obviously, the mechanical oiler requires overhauling. It is a very easy matter, if reference is made to the Indian instruction book, so to adjust the valve that it delivers the proper quantity. We certainly cannot understand the reason for the front cylinder becoming very hot. You do not mention, however, that a knock comes from the front cylinder. Therefore, the heat may be fairly normal and will disappear when the engine becomes run in. It would, of course, be advisable to check the ignition point. The platinum points should be about to open when the piston is within 6 mm. from the top of the compression stroke. The clearance of the exhaust valve stem and tappet should also be only the thickness of a visiting card. The carburetter should be dismantled and cleaned.

CONTROL OF BRITISH MOTORCYCLES.—XI.



Left :
4 h.p. WOLF.
Right :
5 1/2 h.p. Water-cooled
HUMBER.

Information and Advice (contd.).

Carolus Senex.—Once every seven miles.

W.H.H.—The low gear is slipping. The wedge block should be inspected.

H.W.—We are sorry to say we must plead ignorance. We should advise you to apply direct to the Mabon Motor Works, Woodside Gardens, Bruce Grove, Tottenham, N.

A.L.D.—You will have the utmost difficulty in obtaining a petrol licence at the present time. You should, however, apply to the Petrol Control Committee, 19, Berkeley Street, London, W.

S.E.M.—Three valves of a 4 h.p. Douglas engine can be removed without difficulty, but the front exhaust valve necessitates the removal of the cylinder. We advise the Douglas carburetter.

E.L.T.—We can thoroughly recommend Messrs. Charles Barlett, 20, Vine Street, Clerkenwell Road, London, E.C. This concern will pack, deliver and insure your machine to any part of the world.

A.S.—The same licences are required when an Auto-Wheel is attached to a cycle as for an 8 h.p. sidecar combination. These consist, in the first instance, of 5s. driving licence, 5s. registration numbers, £1 Inland Revenue licence.

G.H.S.—The strain is on the tyres; the frame is quite strong enough. We should advise you to fit oversize tyres. The most strain would take place when you carried two passengers on the one journey instead of carrying out two separate journeys with one passenger each time.

C.J.S.—There is a machine available which would be particularly suitable for your friend who has had the misfortune to lose his leg in France. This is the 6 h.p. Royal Enfield, one of the most popular sidecar machines on the British market. The engine is started up by hand, whilst the two gears and clutch are also controlled by hand.

S. and Co.—We should imagine that the ignition is retarded. The platinum points of the contact breaker should be just about to open when the piston is about 7 mm. from the top of the compression stroke. We presume that back-pressure is not being set up by unduly restricted exhaust gases. The jet should not be too large, and if petrol drips from the carburetter when the machine is stationary the level should be lowered.

R.E.—(1) It is inadvisable to heat up paraffin too much. Various chemical changes take place which render it unsuitable as a fuel. (2) You must take particular care that the coils of the copper pipe do not take an upward turn, else air leaks are practically bound to take place. If you prevent this, we expect that you will be able to run the machine with fair success, but not on pure paraffin, as your heating arrangements are insufficient. With regard to superior methods, we beg to refer you to the last dozen issues of MOTOR CYCLING. (3) About 80 and 75 m.p.g. respectively.

H.E.L.M.—(1) We have had some considerable experience in the fitting of auxiliary exhaust ports, and can assure you that if you carry out your suggested arrangements you will regret it. With accurate valve timing—and the modern engine can be truly stated to be accurately timed—there is no advantage whatsoever in the fitting of auxiliary ports, if we exclude such arrangements as the Premier. You will find, incidentally, that your oil consumption will be excessive, and that if you do not fit up a return valve you will have great trouble with running at low speeds. (2) A rough-and-ready method of testing balance when the connecting rod and piston are drilled is as follows: Take off the cylinder and hold the piston very lightly in the hand; turn the pulley round until the connecting rod is nearly at the limit of its travel, let go of the pulley and see what happens. If the piston falls to the bottom the rims of the flywheels should be drilled with about three 1/2-in. holes in each wheel exactly opposite the flywheel balance weight. If the flywheels bear the piston upwards, the rims should be drilled immediately through the balance weight. (3) We expect that the engine would pull a higher gear than 6 1/2 to 1. The best results might be obtained with the gear 5 1/4 to 1. If you desire to raise the compression it is absolutely inadvisable to attach a piece of metal either to the cylinder head or to a piston. If the compression is raised, which we do not advise, 1-16 in. should be turned from the cylinder base. (4) The object of the crankcase baffle plates is to prevent too much oil being thrown into the cylinder. If you desire to lubricate the piston more freely, two or three holes can be drilled in the baffle.

J.M.—As, apparently, your choice lies in the direction of a powerful single-cylinder, we should advise either a 5-6 h.p. Excelsior or a Big 4 Norton.

J.S.—Certainly you are not liable to pay for a new licence. So long as you only keep one machine at a time one Inland Revenue licence is quite sufficient.

A.P.—You should get into communication with Messrs. Wauchope, Shine Lane, London, E.C., who will supply you with a Harley-Davidson by the easy-payment system.

C.S.W.—We cannot do better than refer you to the last dozen issues of MOTOR CYCLING, in which you will find almost innumerable hints on running on paraffin and petrol substitutes.

A.T.D.—We are sorry to say we cannot understand your letter. The Auto-Wheel is firing the whole time, and when a hill causes the engine to flag a few strokes of the pedal are, of course, necessary.

R.E.H.—You are asking rather a lot to call upon a single-cylinder to pull four people. However, we think that a Big 4 h.p. Norton or 5-6 h.p. single-cylinder Excelsior would be suitable. Catalogues forwarded.

J.C.M.—There is no difficulty in accommodating the driving sprocket and speedometer drive when disc wheels are fitted. They can be obtained from M. J. Varley, 57, Stoney Lane, Sparkbrook, Birmingham.

A.R.V.—(1) We are sorry to say we have never heard of George Elliott motor-bicycles. (2) Yes; you will certainly have to pay an Inland Revenue tax. (3) This query is much too vague. Difficult starting may be caused by so many factors. Overhaul the ignition, carburetter, and bind up the induction pipe in order to prevent air leaks. The platinum points should be cleaned and the points of the sparking plug placed close together.

W.J.—Fitting a long exhaust pipe to the back stays terminating in a suitable Clair silencer would silence the exhaust most effectively. Tappet noise can be reduced by keeping the tappets as close as possible to the tappet rod and exhaust valve stem. Vibration can only be due to the fact that the engine is loose in the frame. All crankcase and template bolts should be screwed up dead tight, whilst you may also find it an advantage to fit a metal strap between the top of the cylinder and the lower tank tube, as in the 5-6 h.p. model.

A.C.P.—Something is radically wrong with the valve timing. The inlet should just open when the piston is about to start on the induction stroke, and should close some 10 mm. up the compression stroke. The exhaust valve should just close when the piston has travelled 1 or 2 mm. on the induction stroke, and should open 20 mm. from the bottom of the firing stroke. The ignition is not advanced sufficiently. The platinum points should be about to break when the piston is within 7 mm. to 9 mm. from the top of the compression stroke.

R.C.—(1) Your query is a very difficult one to answer, as the power developed on first, second and third gears would place the machines in different orders. However, presuming that you require to know the utmost power that can be developed on low gear, this would be in the case of a 4 h.p. Douglas. In other words, the 4 h.p. Douglas would pull a bigger load on low gear than the other two single-cylinder machines you mention. (2) All three are eminently suitable for sidecar work. As you only require to travel at such a low speed, we should advise a Douglas, as this engine has more even torque.

O.M.P.—Taking into consideration the fact that you carry your wife on the carrier, we should advise you to obtain a 3 1/2 h.p. Norton with three-speed countershaft gear and chain drive. Of course, the 2 3/4 h.p. A.J.S. would be a much lighter machine, but would not be so suitable for the double load. With regard to the pillion danger, we expect that you do not have access to the Press cuttings forwarded from the many agencies which we employ. If you were to do so, you would be appalled at the number of fatalities and serious accidents that occur directly through motorcyclists accommodating a passenger on the carrier. Admitting that 20,000, 30,000 or 40,000 miles can be travelled without any risk occurring, the time may come when you will regret the practice which you now uphold. It is impossible for the rider of a machine to sway that machine in an emergency with the ease and speed as when the machine is ridden solo. Not only has the rider to overcome the weight of the machine, but also the additional weight of the person on the carrier. It is rather significant that many insurance companies will not contemplate for a moment the insurance of man and machine when a passenger is accommodated on the carrier.

C.F.R.—The petrol licence is only available on the three months named.

W.R.—With regard to the gear, this is manufactured by Messrs. A. W. Wall, Roc Works, Hay Mills, Birmingham. We are sorry to say we have no out-of-date catalogues.

T.D.—You cannot do better than place yourself in the hands of a patent agent whom we can recommend with every confidence, viz., Phillip's Chartered Patent Agents, 70, Chancery Lane, London, W.C.

W.H.B.—(1) It is, of course, quite impossible to fit a 76 mm. piston to your 85 mm. engine. (2) You cannot fit a Zenith gear even if you could obtain it, as a special engine-shaft is necessary. (3) No.

J.B.J.—(1) Obviously, the entire trouble with your gearbox is that it has run bone dry. You had better pour in half a pint of thin engine oil. (2) You will not upset the timing of the engine if you dismantle the gearbox.

A.A.P.—In every issue of MOTOR CYCLING we publish a list of reliable petrol substitutes. You must not, of course, expect to get good results from these substitutes unless you carry out some heating device as advised in the pages of this journal.

W.A.W.—The correct method of starting up is as follows:—The gear lever should be placed in neutral with the clutch "in." The engine is then started by means of the kick-starter; the machine mounted, the clutch taken out of engagement, the gear lever slipped into first gear and the clutch gradually engaged.

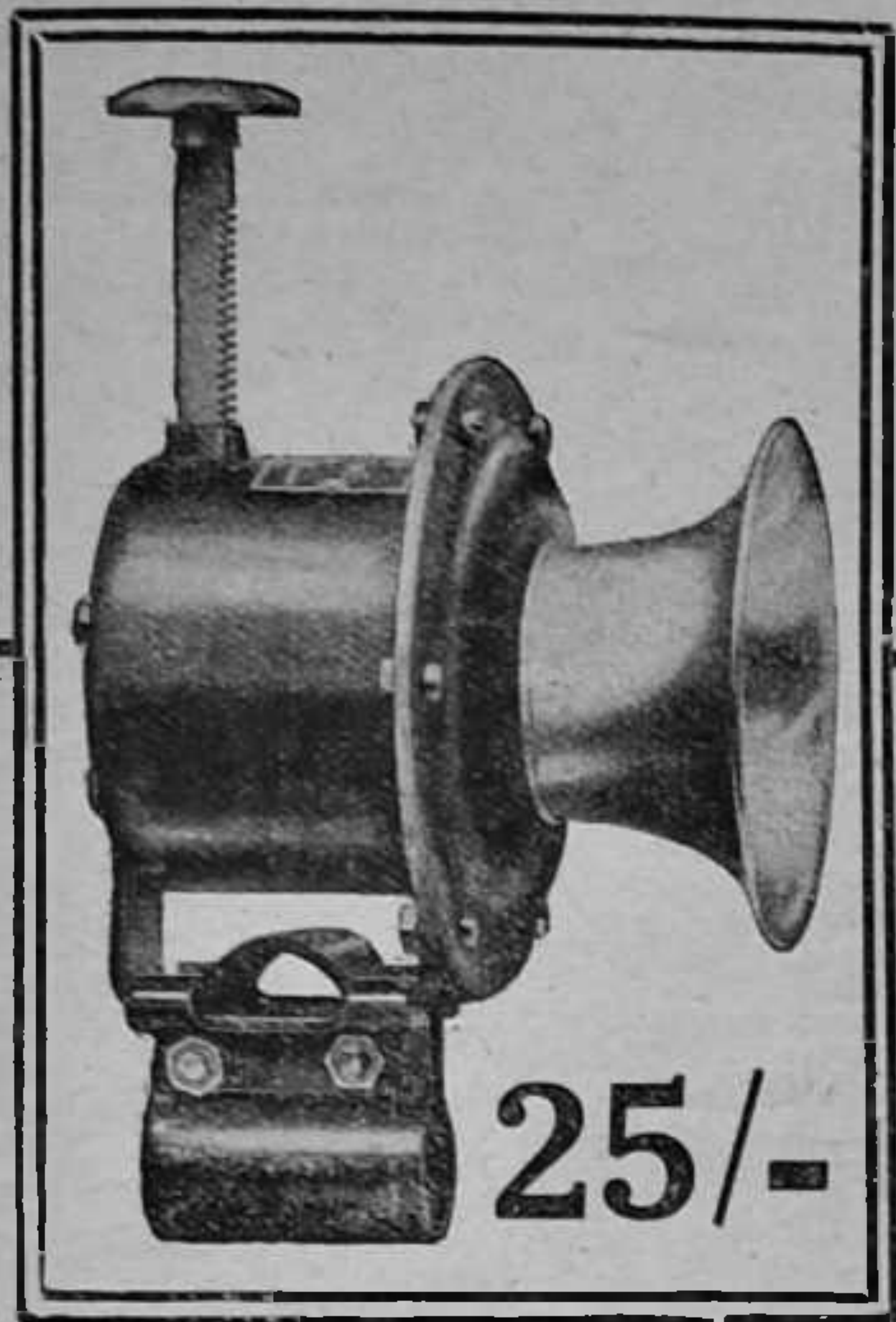
E.R.—We can certainly recommend the 4 1/4 h.p. B.S.A. The question of chain and chain-cum-belt drive is rather a matter of personal choice. The drive with the latter model is slightly more sweet than with the all-chain drive, but perhaps, for sidecar work, the latter transmission is to be preferred. You will find the petrol consumption is in the neighbourhood of 85 m.p.g. with sidecar.

R.W.J.—(1) Your only course is to worry the Petrol Committee, and, if possible, call upon them. Many thousands of motorcyclists have not received a reply to their communications. (2) Yes. (3) Catalogue forwarded. (4) The Stewart speedometer is quite reliable. (5) An injection of petrol is advisable, although not always necessary.

W.McP.—(1) We are unaware as to whether the Silver vaporizer is, or will be, made suitable for twin-cylinder engines. You should get into communication with the Quadrant Cycle Co., Ltd., Lawley Street, Birmingham. (2) Yes. (3) Not necessary. (4) We presume so. (5) It would be necessary to connect the auxiliary tank to the carburetter, although, of course, fitting up a supply of petrol direct to the jet might be successful. (6) A reduction of the compression would certainly be advisable. (7) From 75 to 85 m.p.g.

J.F.B.—(1) If decarbonizing by means of scrapers is employed it is necessary to blow the particles out of the ports by means of an ordinary tyre pump, the flexible connection of which is inserted through the compression release. (2) We expect that the rapid accumulation of carbon deposit is due to excessive oiling. You should cut down the lubrication so that the engine only smokes when accelerated on low gear. (3) If you fit the Albion two-speed gearbox, we expect that you will find you will have quite sufficient power on hills for your purpose. In our opinion, it would not be advisable to fit a variable pulley as well. Apparently, however, there would be no reason why it should not be placed in the position of the crankshaft belt pulley of the gearbox.

A.T.—You seem to have carried out most of the necessary investigations. There is one point, however, you do not mention, i.e., have you checked the ignition point? The platinum points of the magneto should break when the piston is 7 mm. from the top of the compression stroke. The fact that the platinum points have burnt out indicates that the magneto requires overhauling. We expect that if a new condenser were fitted, although, of course, we do not suggest that you should purchase a new condenser without investigation, that would cure the trouble. As you state, the petrol consumption of 100 m.p.g. shows the carburetter is in order. Another point that should receive attention is freeness of the engine. With the drain tap, if such is fitted, and compression release removed, is it possible to turn over the engine freely by hand? If it is not it is reasonable to suggest that the new rings are binding, or that one of the bearings is giving trouble. If, after you have carried out these investigations, there is no beneficial result, please write to us again.



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—A.J.S., 1916, latest 1hp combination, brand new, with spare wheel, tyre and windscreen, in stock for immediate delivery. Prices and particulars, Robinson's Garage, Green St., Cambridge. 360-452

—A.J.S., 1914, 6hp combination, 3-speed countershaft, clutch, kick-starter, faultless condition, accessories, £65, or part exchange solo mount. Pigot Disney, E. Molesey, Surrey. 360-b99

—A.J.S. 4hp combination, new 1916, electric Lucas lighting set, Stewart horn, spare wheel and cover, screen, luggage carrier, spare bulbs, electric inspection lamp, watch, storm apron, spares, full kit tools, every requirement, as new, £95. Apply, W.E.C., 3 Chester Bridge, Crews. 360-b69

—ALLDAYS ALLON, 1915, 2-speed, 2-stroke, in excellent running order, £25. Lindsay, 12 Duke's Mews, Manchester Square, W. 360-417

—ALLDAYS-ALLO, actually in stock, 2-speed models, £42; easy payments arranged. Jones, Garage, Broadway, Muswell Hill. 360-499

—ALLDAYS ALLON, all models, delivered from stock; also a 1915 single-speed, with original tyres, at £27, and a late 1915, 2-speed, hand clutch, accessories, original tyres, £36 10s.; deferred payments; exchanges. Lamb's, 151 High St., Walthamstow; 15 High Rd., Wood Green. 360-529

—ALLON, 1916, all accessories, bargain, £25. 85 Dalberg Rd., Brixton, S.W. 360-b202

—AMERICAN EXCELSIOR, 1914, single-cylinder, 4hp, clutch, perfect order, £15, take sidecar anywhere, bargain 119 Ley St., Ilford. 360-b85

—ANTOINE, 5-6hp, 2-speed, and sidecar, £17. Ross, 86 High Rd., Lee. 360-522

—ANZAC, 1916, 2hp, 2-stroke, fitted for paraffin, new condition, nearest £18 10s. Sanders, 29 Denmark Rd., Gloucester. 360-b47

—ARIEL, 3hp, Canoelet coach-built sidecar, gears, perfect combination throughout, genuine bargain, £20. 245 Hammersmith Rd., London W. 360-c816

—ARIEL, 1916, all models in stock; ladies taught free by lady tutor; write for deferred payment terms. Ariels special agent, Jones, Garage, Broadway, Muswell Hill. 360-b88

—AUTO-WHEEL, 1916, new June, little used, perfect, £12, cost £18. Corpl. St. John, R.E., Aldershot. 360-b86

—AUTO-WHEEL, 1914, new Dunlop, splendid condition, £10 10s. Hartridge, 119 Mayfair Avenue, Ilford. 360-b54

—BAT, latest sporting, 4-5hp, 2-speed model, in stock; also latest model, slightly soiled, £16 off list. P. J. Evans, John Bright St., Birmingham. 360-425

—BAT, 1912, 3hp, a bargain, £14. Ross, 86 High Rd., Lee, S.E. 360-521

—BAT, 1914, 2-speed, 4-5hp, £36, like new. Ross, 86 High Rd., Lee, S.E. 360-520

—BAT-J.A.P., 1915, 4hp, twin-cylinder, standard specification, as new, complete accessories, £45. Geo. Langley, 49 Bromham Rd., Bedford. 360-c733

—BLACKBURN, 1915, and sidecar, splendid condition, lamps, horn, windscreen, petrol saving, bargain, selling account ill health, trial. Bannister, Railway St., Chatham. 360-b65

—BRADBURY, 4hp, 1912, N.S.U. 2 speeds, in real good order, £17 10s. Percy and Co., 337 Euston Rd., London. 360-405

—BRADBURY, 1914, 4hp, 3-speed hub gear, clutch, fitted Bradbury 1914 12-guinea sidecar, £35. Batchelor, Clarence St., Kingston. 360-b168

—BROUGH, 1916, 3hp, T.T., 2 speeds, countershaft, run under 350 miles, all accessories, condition guaranteed as new, £53. B., c/o Porter, Caversham Bridge Hotel, Reading. 360-b143

—BROUGH, 1914, 2-speed, T.T., £37, very fast. Ross, 86 High Rd., Lee, S.E. 360-519

—B.S.A., 4hp, with special Canoelet sidecar, late 1915 model, speedometer, Lucas horn, 3 P. and 11 lamps; this machine is in perfect condition, and is very smart, mileage driven is under 2000, bargain, £75. Apply, Beadle, Motors, Dartford. 361-344

—B.S.A., 1914, 4hp, 3 speeds, countershaft gear, clutch, kick-starter, splendid order, £40. Trenlor, 38 Clarence St., Kingston. 360-b166

—B.S.A., 1914, chain-cum-belt, 3-speed countershaft, speedometer, accessories, £35. Benson, 62 London Rd., Reading. 362-b181

—B.S.A., November, 1913, model, but had less than six months use to date, 3hp, 2-speed, free engine, price £35, includes lamps, tools, horn and comfortable wicker sidecar; seen after 6 and weekend. Walter, 77 Alexandra Mansions, Hastings St., King's Cross. 360-b152

—B.S.A., 3hp, 1913 model, 2-speed, free engine, internal and external condition excellent, accessories, £34. Carter, 23 Princes Rd., Peterborough. 360-b137

—B.S.A., 1913, clutch model, lamps, new condition, £25. 29 St. Leonard's St., Bow. 360-b131

—B.S.A., 1914, 3-speed, 4hp, Bosch magneto, must be sold owing to joining up, £30, or nearest offer, in perfect order. Cox, 44 Gower Place, Russell Square. 360-b128

—B.S.A., 4hp, coach-built sidecar, late 1915, chain drive, 3-speed, countershaft gear and clutch, only done 1400 miles, lamps, Klaxon horn, hood, screen, spares, tools, as new, £75; call after 7 o'clock. P. 53 Lordship Rd., Stoke Newington. 360-b113

—B.S.A., 1913, 2-speed model, Cowey, horn, headlamp, rear lamp, all spares, tyres (Dunlop), belt (new) and condition throughout exceptional, 30 guineas; wanted lightweight. Jackson, Sydney Lodge, Wotton Rd., Croydon. 360-b112

—B.S.A. Auto-Wheel, little used, perfect condition, running on paraffin, 120 m.p.g., shock absorber, new spare chain, new plug, etc., £10. Pto. Ellidge, King George Hospital, Stamford St., London, S.E. 360-b106

—B.S.A., 1913, 2-speed, chain drive, all accessories, a cheap lot, £30. Easy payments arranged. Jones, Garage, Broadway, Muswell Hill. 360-501

—B.S.A., 1913, 2-speed, all in perfect condition, all accessories, £30; easy payments arranged. Jones, Garage, Broadway, Muswell Hill. 360-497

—B.S.A., 1916, Model K and H, immediate deliveries, £62 and £64; easy payments if required. Jones, Garage, Broadway, Muswell Hill. 360-496

—B.S.A., 1916, 4hp, model K, £63, with coach-built Phoenix sidecar, £73 delivery from stock. D. J. Shepherd and Co., Enfield Highway, N. 360-475

—B.S.A., 1914, 3hp, 2-speed, free engine, smart coach-built sidecar, very little used, splendid condition, any trial, £43 10s. or nearest offer. Hill, 24 Silchester Rd., W. 360-b63

—B.S.A., 1914, model K, perfect condition, all accessories, and sidecar, £50. 1 Lavington Villas, Cross St., South Farnborough, Hants. 360-b58

—B.S.A., actually in stock, 3 model Ks, belt-cum-chain, £69 each; 1 model H, all chain, £64; also B.S.A. Canoelet sidecars to suit, from 13 guineas, hoods and screens extra; liberal exchanges; deferred payments. Lamb's, 151 High St., Walthamstow; 15 High Rd., Wood Green. 360-536

—B.S.A., 1914, 2-speed, kick starter, Phoenix coach sidecar, £42; also an extra 1912 B.S.A., 3-speed, pedal start, cane sidecar, 3 nearly new 2-guinea Kempshall tyres, £34 10s.; deferred terms; exchanges. Lamb's, 151 High St., Walthamstow; 15 High Rd., Wood Green. 360-537

—CALTHORPE, 1915, 2hp, 2-stroke, 2-speed, £24. Ross, 86 High Rd., Lee. 360-524

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10175	2½ h.p. 2-stroke Calthorpe	£28 17 6
10183	2½ h.p. Calthorpe Jap, single speed	£32 0 6
10195	4-5 h.p. countershaft Zenith	£69 0
10227	2½ h.p. single-sp. Calthorpe Jap	£32 0 6
10367	2½ h.p. 1916 single-speed Lewis	32 0
10488	2½ h.p. 1916 2-sp. 2-str. Calthorpe	32 11
10497	2½ h.p. 1916 2-sp. Calthorpe-Jap	37 16
10505	2½ h.p. 1916 New Imperial Jap	38 0
10578	2½ h.p. 1916 2-sp. Calthorpe Jap	37 16
10579	2½ h.p. 1916 2-sp. Calthorpe Jap	37 16
10618	2½ h.p. 1916 2-speed, kick-start, New Imperial	44 8
10626	4½ h.p. 1916 2-sp. model K B.S.A.	62 0
10644	4½ h.p. 1916 3-sp. model K B.S.A.	62 0
10635	4½ h.p. 1916 3-sp. model K B.S.A.	62 0
10637	4-5 h.p. 1916 2-speed Bat	63 5
10652	4-5 h.p. 1916 2-sp. Calthorpe combination	70 7
10354	3 h.p. 1916 2-speed Enfield	57 15
10655	2½ h.p. 1916 2-speed Enfield	44 2
10669	2½ h.p. 1916 2-sp. model E Lewis	47 10
10670	4½ h.p. 1916 3-sp. model K B.S.A.	62 0
10672	3 h.p. 1916 Royal Enfield	57 15
10677	2½ h.p. 1916 sin. sp. Popular Lewis	32 0
10678	2½ h.p. 1916 sin. sp. Popular Lewis	32 0
10680	4½ h.p. 1916 3-sp. model K B.S.A.	62 0
10685	4½ h.p. 1916 3-sp. model K B.S.A.	62 0

NEW 1915 MACHINES.

9861	2½ h.p. 2-sp. Wolf, 2-stroke	£28 8 0
9902	2½ h.p. 2-speed Wolf-Jap	33 10 0
9947	2½ h.p. 2-stroke Wolf	24 18 6

LIST OF SIDECARS IN STOCK.

4647	1912 Montgomery easter-wheel sidecar, No. 5	£ 4 10
6263	1913 Condola sidecar	7 10
7751	Williamson cab	£20 0 0
7941	Coach-built sidecar	2 0 0
8606	Chater Lea sidecar	4 10 0
8923	Bradbury wicker tradesman's carrier, new	12 0 0
9489	Coach-built sidecar	2 10 0
9607	Canoelet coach-blt. sidecar	11 0 0
9855	Canoelet sidecar	14 0 6
9955	Canoelet C4, with apron	14 8 0
10284	Model B3, Canoelet ch-blt.	14 8 9
10525	1916 Empire sidecar	13 0 0
10526	1916 Canoelet sidecar	9 9 0
10532	1916 Canoelet sidecar	13 1 0
10535	Codiva sidecar	5 0 0
10555	Canoelet coach-built sidecar	13 0 0
10554	Canoelet sidecar	14 17 0
10559	Minor Canoelet sidecar	9 19 6
10560	Minor Canoelet sidecar	9 19 6
10576	Rudge sidecar, new	10 16 0
10549	Canoelet Minor sidecar	9 10 0
10625	Canoelet sidecar, new, Minor	9 19 6
10636	Canoelet sidecar, new	14 17 6
10605	Coach-built sidecar, new	—
10666	Coach-built sidecar, new	—
10667	Coach-built sidecar, new	—
10690	Coach-built Canoelet sidecar with B.S.A. fittings	14 17 6
10691	Coach-built Canoelet sidecar B.S.A. fittings	14 17 6

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9248	1½ h.p. 1909 Motosacoche	12 10
6421	3½ h.p. 1908 Minerva	15 0
7521	5-6 h.p. 1911 4-cyl. F.N.	20 0
7551	3½ h.p. 1905 Rex	12 10
7708	3½ h.p. 1908 N.S.U.	16 0
7992	3½ h.p. 2-speed Fafnir and coach-built sidecar	22 10
8175	6 h.p. 1913 2-speed N.S.U.	30 0
8320	3½ h.p. 1911 Ariel, variable gear	20 0
8561	3½ h.p. Vindeo and sidecar	17 10
8718	3½ h.p. 2-sp. Fafnir and sidecar	22 10
8802	7 h.p. 1914 Indian with electric starter	60 0
8832	1½ h.p. 1909 Motosacoche	9 0
9076	5 h.p. 1907 f.e. Roc	20 0
9429	7 h.p. 1913 Premier and sidecar	57 10
9542	2½ h.p. 1915 2-sp. Sun Vitesse	32 10
9594	5-6 h.p. 2-speed N.S.U.	30 0
9597	6 h.p. Zenith and sidecar	37 10
9633	2½ h.p. 1912 Premier, v'ble gear	18 10
9656	2½ h.p. twin N.S.U.	17 10
9755	6 h.p. 2-sp. N.S.U. and sidecar	22 10
9767	5 h.p. 1908 2-sp. Rex and s.c.	27 10
9772	3½ h.p. 1914 water-cooled 3-sp. Humber	37 10
9778	3½ h.p. 1914 3-sp. New Imperial and sidecar	37 10
9823	2½ h.p. 1912 twin Enfield	27 10
9839	3½ h.p. 1907 Triumph and s.c.	22 10
9844	5-6 h.p. N.S.U.	16 10
9847	4½ h.p. 1915 3-sp. Quadrant	42 10
9867	2½ h.p. 1911 2-speed Enfield	28 0
9868	3 h.p. 1913 2-speed N.S.U.	28 10
9958	6 h.p. 1909 2-sp. Rex and s.c.	28 10
9995	4-5 h.p. 1913 3-sp. Hazlewood and sidecar	37 10
10021	3½ h.p. 1912 Swift	22 0
10037	4 h.p. 1914 3-speed Wolf	36 0
10070	6 h.p. 1914 2-sp. Enfield comb.	65 0
10089	3½ h.p. 1912 f.e. Bradbury	25 0
10109	3½ h.p. 1909 f.e. Triumph	25 0
10127	6 h.p. 1912 Zenith and sidecar	35 0
10142	3½ h.p. 1913 3-speed Singer	32 10
10205	3½ h.p. 2-speed N.S.U.	20 0
10271	2½ h.p. 1915 2-speed Lewis	32 10
10323	2½ h.p. 1911 2-speed Douglas	25 0
10333	3½ h.p. 1908 Triumph	22 10
10342	1½ h.p. 1914 Auto-Wheel	10 10
10390	2½ h.p. 1915 2-speed Wolf-Jap	30 0
10396	3½ h.p. Fafnir, Roc 2-sp. gear	12 10
10402	4½ h.p. 1915 Grandex	37 10
10419	2½ h.p. 1915 Calthorpe-Jap	33 10
10427	3½ h.p. 1912 3-speed Rover and sidecar	32 10
10430	2 h.p. 1914 2-speed Calthorpe Junior	17 10
10432	2 h.p. 1914 2-speed Calthorpe Junior	18 10
10435	6 h.p. 1912 Rex-Jap and sidecar, clutch model	27 10
10448	4½ h.p. 1914 3-sp. B.S.A. & s.c.	57 10
10451	3½ h.p. 1911 3-speed Jap engine machine and sidecar	25 0

Second-hand Machines in Stock—Contd.

No.	Second-hand Machines in Stock—Contd.	£ s.
10453	3½ h.p. 1915 3-speed Sunbeam and sidecar	73 10
10458	2½ h.p. 1915 2-speed Glyno	25 0
10460	3½ h.p. Abingdon engined motor-bicycle	10 0
10462	5-6 h.p. 1913 2-speed N.S.U. and sidecar	42 0
10474	2½ h.p. Twin Royal Enfield	23 10
10485	4 h.p. single-speed Bradbury	23 10
10495	7-9 h.p. Indian and sidecar	63 0
10516	2½ h.p. 1916 2-sp 2-str. Calthorpe	30 0
10519	3½ h.p. 2-speed Premier	35 0
10521	1½ h.p. single sp. Motosacoche	—
10523	2½ h.p. 1913 2-sp. Douglas	—
10533	4½ h.p. 1913 3-speed Quadrant	27 10
10538	8½ h.p. 1913 twin Indian	47 10
10540	1½ h.p. 1911 3-sp. James and s'car	50 0
10542	3½ h.p. 1913 3-speed Humber	25 0
10563	1½ h.p. J.E.S.	10 10
10561	7-9 h.p. 1914 2-speed Indian	35 0
10565	2½ h.p. 1914 twin N.U.T.	35 0
10567	2½ h.p. 1915 2-speed 2-stroke Calthorpe	25 0
10570	4-5 h.p. 1916 2-speed Bat	47 10
10573	2½ h.p. 1915 2-speed Calthorpe	31 10
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10584	3½ h.p. 1912 Premier and sidecar	20 0
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10588	9½ h.p. 1913 Rudge-Multi and s.c.	46 0
10590	8 h.p. 1912 3-sp. Matchless & s.c.	35 0
10596	2½ h.p. 1913 Rudge-Multi	35 0
10609	2½ h.p. 1913 2-speed Douglas	27 10
10608	1½ h.p. 1915 3-sp. James and s.c.	68 0
10610	2½ h.p. 1914 3-sp. New Hudson & s.c.	45 0
10614	3½ h.p. 1911 single-speed Humber	25 0
10616	3½ h.p. 2-speed Regal-Precision	—
10619	3½ h.p. 1912 single-speed Triumph	25 0
10629	7-9 h.p. 1915 3-speed Indian and sidecar	75 0
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10644	4-5 h.p. 1915 Zenith and sidecar	67 10
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10663	7-9 h.p. 1911 2-speed Indian	35 0
10664	7-9 h.p. 1913 2-sp. Indian and s.c.	37 10
10668	4 h.p. 1914 2-speed Douglas	42 0
10670	4½ h.p. 1914 3-sp. B.S.A. comb.	45 0
10674	6 h.p. 1916 3-sp. Glyno and s.c.	67 10
10682	6 h.p. 1914 3-sp. Bradbury	47 10
10684	7-9 h.p. 1911 3-speed Indian	27 10
10686	2½ h.p. 1912 2-sp. Singer	20 0
10687	1½ h.p. single speed J.E.S.	—
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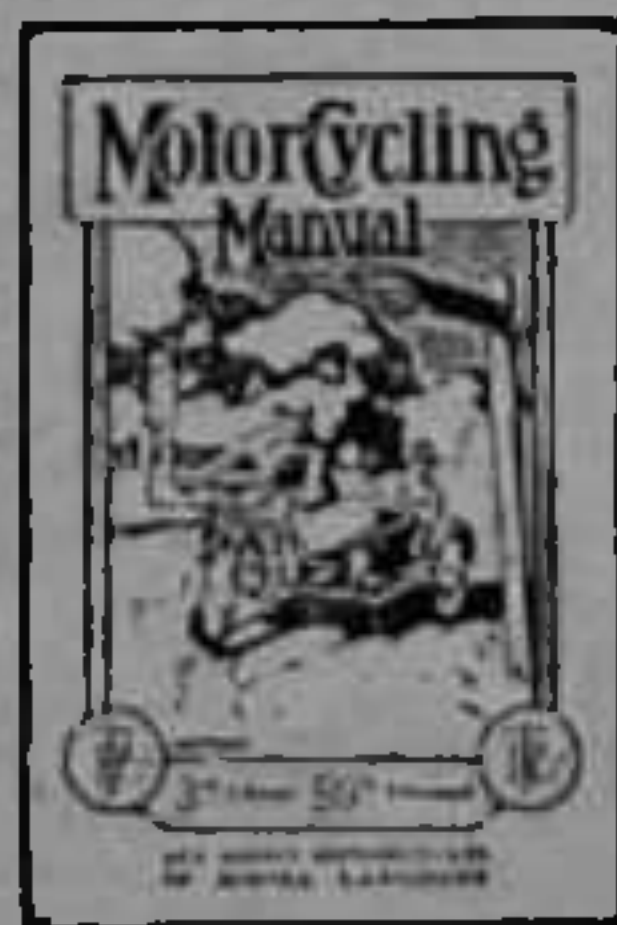
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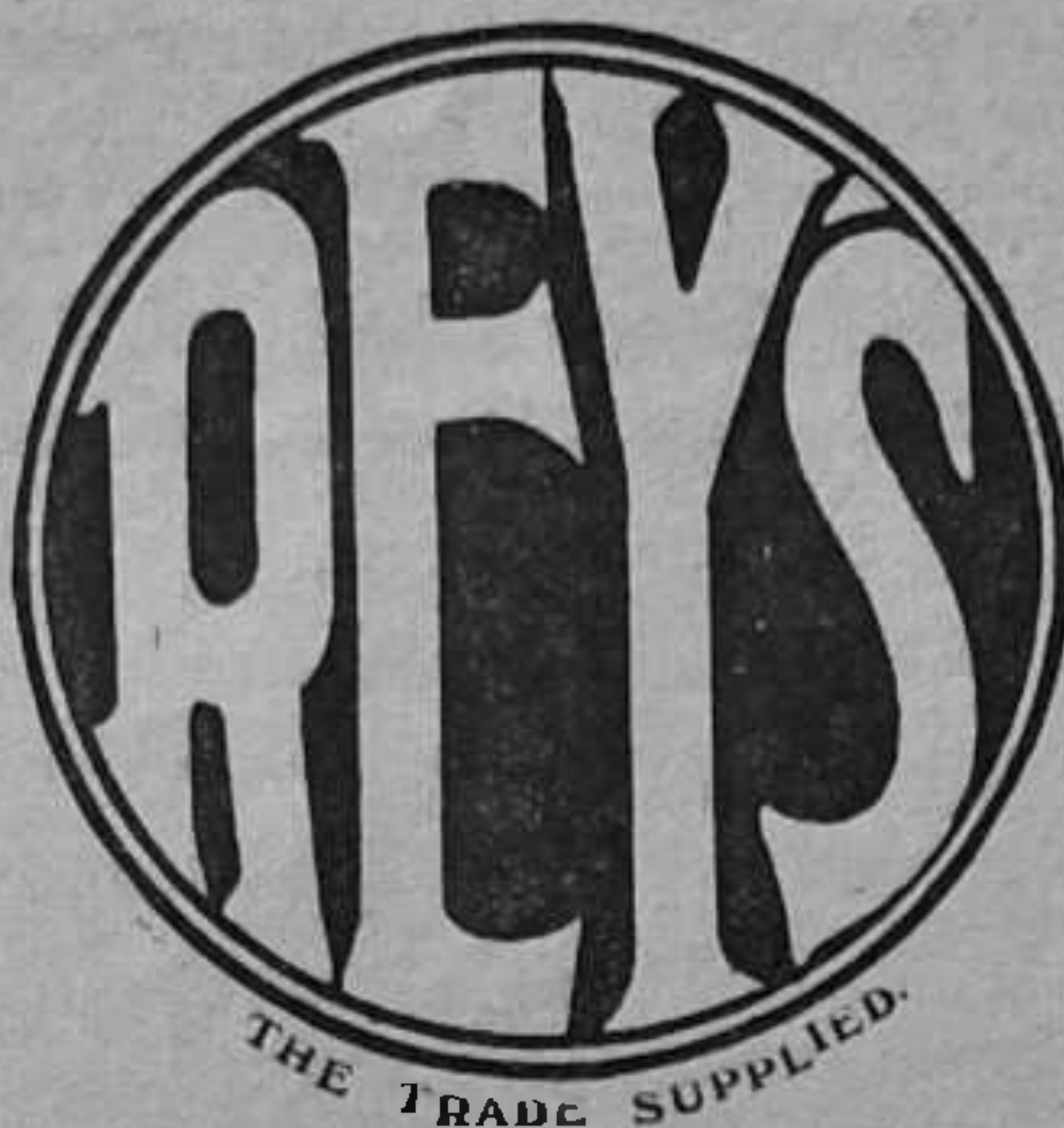
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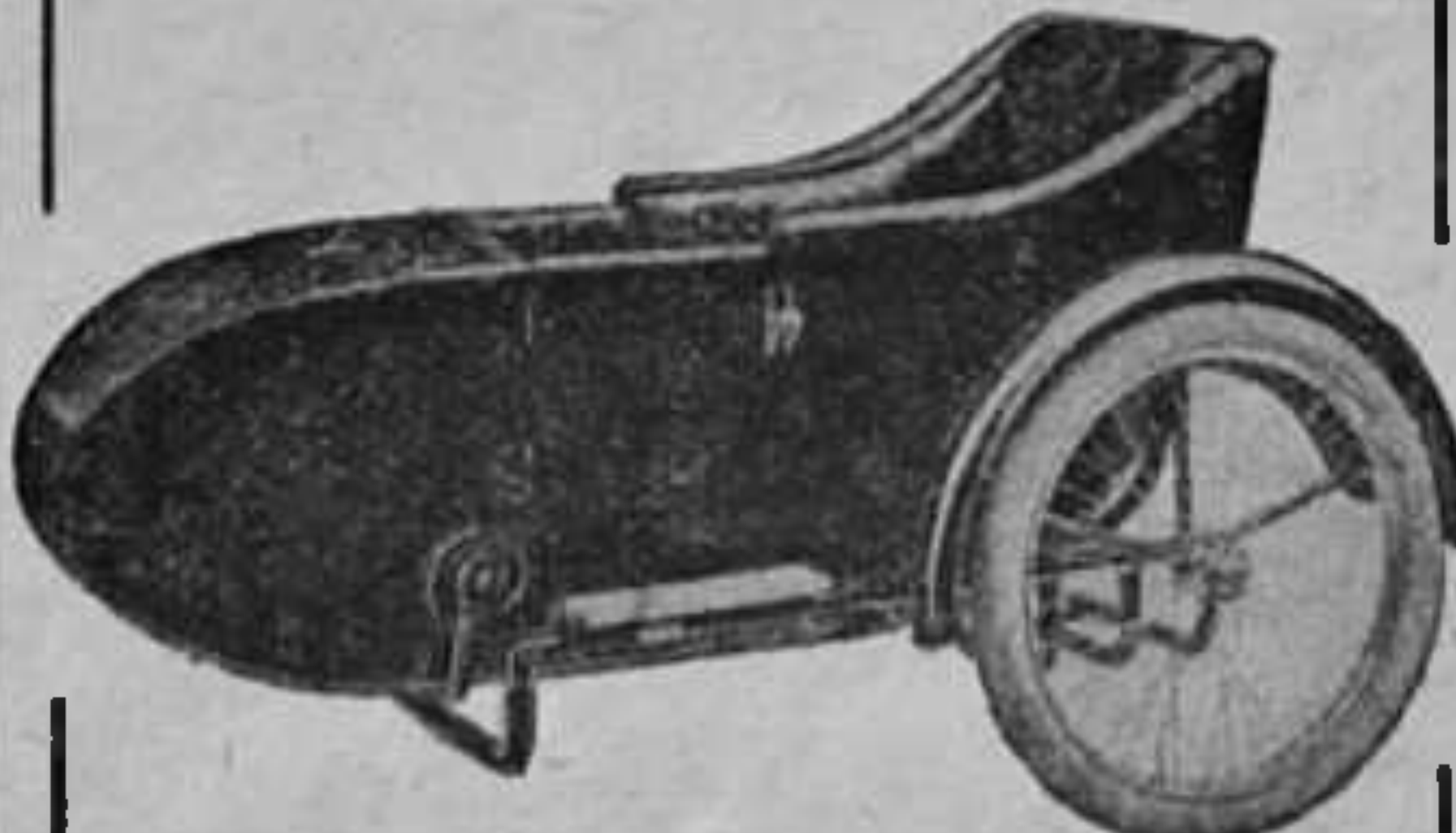
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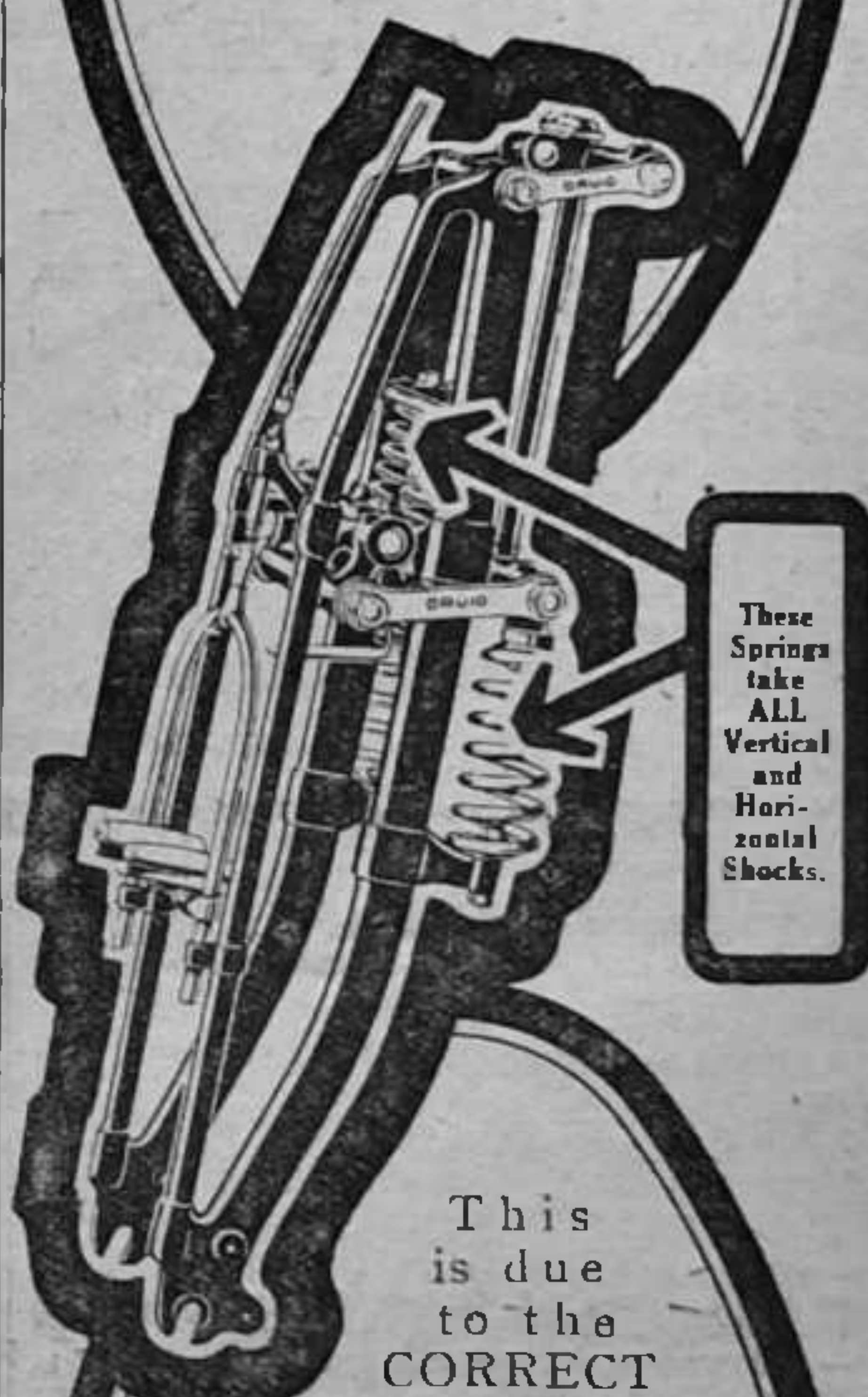
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New Michelin clearance covers, beaded edge, 26 by 2 9/16, 9s. 6d.; 28 by 2 10/16, 12s.; 28 by 2 11/16, 12s.; 28 by 2 12/16, 12s.; 28 by 2 13/16, 12s.; 28 by 2 14/16, 12s.; 28 by 2 15/16, 12s.; 28 by 2 16/16, 12s.; 28 by 2 17/16, 12s.; 28 by 2 18/16, 12s.; 28 by 2 19/16, 12s.; 28 by 2 20/16, 12s.; 28 by 2 21/16, 12s.; 28 by 2 22/16, 12s.; 28 by 2 23/16, 12s.; 28 by 2 24/16, 12s.; 28 by 2 25/16, 12s.; 28 by 2 26/16, 12s.; 28 by 2 27/16, 12s.; 28 by 2 28/16, 12s.; 28 by 2 29/16, 12s.; 28 by 2 30/16, 12s.; 28 by 2 31/16, 12s.; 28 by 2 32/16, 12s.; 28 by 2 33/16, 12s.; 28 by 2 34/16, 12s.; 28 by 2 35/16, 12s.; 28 by 2 36/16, 12s.; 28 by 2 37/16, 12s.; 28 by 2 38/16, 12s.; 28 by 2 39/16, 12s.; 28 by 2 40/16, 12s.; 28 by 2 41/16, 12s.; 28 by 2 42/16, 12s.; 28 by 2 43/16, 12s.; 28 by 2 44/16, 12s.; 28 by 2 45/16, 12s.; 28 by 2 46/16, 12s.; 28 by 2 47/16, 12s.; 28 by 2 48/16, 12s.; 28 by 2 49/16, 12s.; 28 by 2 50/16, 12s.; 28 by 2 51/16, 12s.; 28 by 2 52/16, 12s.; 28 by 2 53/16, 12s.; 28 by 2 54/16, 12s.; 28 by 2 55/16, 12s.; 28 by 2 56/16, 12s.; 28 by 2 57/16, 12s.; 28 by 2 58/16, 12s.; 28 by 2 59/16, 12s.; 28 by 2 60/16, 12s.; 28 by 2 61/16, 12s.; 28 by 2 62/16, 12s.; 28 by 2 63/16, 12s.; 28 by 2 64/16, 12s.; 28 by 2 65/16, 12s.; 28 by 2 66/16, 12s.; 28 by 2 67/16, 12s.; 28 by 2 68/16, 12s.; 28 by 2 69/16, 12s.; 28 by 2 70/16, 12s.; 28 by 2 71/16, 12s.; 28 by 2 72/16, 12s.; 28 by 2 73/16, 12s.; 28 by 2 74/16, 12s.; 28 by 2 75/16, 12s.; 28 by 2 76/16, 12s.; 28 by 2 77/16, 12s.; 28 by 2 78/16, 12s.; 28 by 2 79/16, 12s.; 28 by 2 80/16, 12s.; 28 by 2 81/16, 12s.; 28 by 2 82/16, 12s.; 28 by 2 83/16, 12s.; 28 by 2 84/16, 12s.; 28 by 2 85/16, 12s.; 28 by 2 86/16, 12s.; 28 by 2 87/16, 12s.; 28 by 2 88/16, 12s.; 28 by 2 89/16, 12s.; 28 by 2 90/16, 12s.; 28 by 2 91/16, 12s.; 28 by 2 92/16, 12s.; 28 by 2 93/16, 12s.; 28 by 2 94/16, 12s.; 28 by 2 95/16, 12s.; 28 by 2 96/16, 12s.; 28 by 2 97/16, 12s.; 28 by 2 98/16, 12s.; 28 by 2 99/16, 12s.; 28 by 2 100/16, 12s.; 28 by 2 101/16, 12s.; 28 by 2 102/16, 12s.; 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SPEEDOMETERS.

- WATFORD** speedometer, 2866 miles, 40s.; Miller's lamp set, 20s. 8s., 41 Ash Rd., Stratford. 330-n921
- SPEEDOMETER**, Cowey, 60 m.p.h., cost £4 4s., good order, 38s. 6d., 1 Elmer St., Wandsworth. 360-e938
- COWEY** speedometer, off Triumph, 35s.; Jones speedometer (new), done 160 miles, £2. Sinclair, East Molesey. 360-h160

SITUATIONS VACANT.**Defence of the Realm Act
REGULATION 8 (b).**

Under the above regulation, advertisements offering situations with firms whose works are situated within 30 miles of London and whose business consists wholly or mainly in engineering, shipbuilding, or the production of munitions of war, or of substances required for the production thereof, must contain the words:—"NO PERSON ENGAGED ON GOVERNMENT WORK OR RESIDENT MORE THAN 10 MILES DISTANT NEED APPLY."

When the advertiser's works are situated more than 30 miles from London all applications must be made through a Labour Exchange, by means of a box number allocated by the Board of Trade. Forms of application may be obtained from any Labour Exchange, or from the offices of this paper. Each advertisement must clearly state that no person already engaged on Government work need apply.

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NORTON Motorcycles

1916 NORTON, Big 4 and Sporting
sidocar, auxiliary petrol tank fitted.

SECOND-HAND.

1915 B.R.S. NORTON	... £52 10
1916 ARNO, 3½ h.p. T.T., soiled	40 0
1914 NORTON, T.T. ...	40 0
1914 NEW IMPERIAL, 3½ h.p., twin	35 0
1913 ENFIELD, 3 h.p., twin	35 0
1913 TRIUMPH, kick starter	32 10
1914 ZENITH, 3½ h.p. ...	35 0
10 h.p. REGAL-PRECISION and Flying Middleton sidocar	32 10
1914 MORGAN, de Luxe, hood and screen	£75 0
1914, SWIFT, 7-9 h.p., repainted, etc. ...	120 0
1913 HUMBER, 11-9 h.p., 2- seater, and dicky	165 0
1910 DE DION, three-seater, 8 h.p. ...	60 0

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Phone:—943 Mayfair.

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Exceptional Terms
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THE 'GRADO' MULTI-PULLEY

WITH FREE ENGINE. Starts your machine like a car!

Price, up to 4 h.p. £3 3 0

" " 6 h.p. £3 10 0

10/- extra to suit Engines with crank bosses, like
J.A.P., old Rex, etc.

Lightweight Model - £2:10:0

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A PEDLEY BELT MEANS ABSOLUTE SATISFACTION

TYRES AND TUBES.

—**ECONOMIC.** We present free, where specified below a fully guaranteed 3s. 6d. Simms plug.

—**ECONOMIC.** Kempshall clearance non-skids, 26 by 2¼, 30s.; Specials, 32s. 6d.; 26 by 2¾, 35s.; 26 by 2½ by 2¼, 40s.; 26 by 3, for 650 by 65, 50s., including free plug.

—**ECONOMIC.** Kempshall clearance Anti-skids, 26 by 2, 19s. 6d.; 26 by 2¼, 22s.; 26 by 2¾, oversize, 23s. 6d.; 26 by 2½, 25s.; 28 by 2¼, 26s. 6d., including free plug.

—**ECONOMIC.** Special oversize 28 by 3¼ Kempshall steel studs, embedded in fibre, 60s., fully guaranteed, ideal for heavy combinations.

—**ECONOMIC.** 26 by 2¼ heavy rubber-studded Midland Britanic, 21s. 26 by 2¼, light, 15s.; ribbed and rubber-studded, 26 by 2, heavies, 20s.

—**ECONOMIC.** Pirelli, 26 by 2¾, oversize, 25s., listed 39s.; 26 by 2½, 20s.; 28 by 3, Kempshall sidocar, 16s. 6d.

—**ECONOMIC.** Wood-Milne, 26 by 2¼, rubber-studded, Special, 20s.; ditto, extra strong, 25s.; Grip-ribbed Specials, 20s.; Grip-ribbed, extra strong, 25s.; sidocar, 16s.; 26 by 2½ for 26 by 2¼, Special Grip-ribbed, 22s. 6d.; 26 by 2, extra heavy Grip-ribbed, 19s., including free plug.

—**ECONOMIC.** Wood-Milne, heavy, 28 by 3, grooved, 27s. 6d.; 28 by 3, heavy Clincher de luxe non-skids, 35s.

—**ECONOMIC.** Continental 26 by 2¼ wired covers, 10s. 6d., pair 18s. 6d., oversize for 26 by 2 rims.

—**ECONOMIC.** Continental, basket pattern, 26 by 2, 15s. 6d.; 26 by 2¾, 17s. 6d.; 26 by 2½, model de course, heavy, 19s.

—**ECONOMIC.** Special clearance of fully-guaranteed but shop-soiled 26 by 2½ Kempshall heavy non-skids, 38s., listed 48s.

—**ECONOMIC.** Enfield riders note, 650 by 65 Kempshall, extra heavy, steel studs embedded in fibre, 47s. 6d., fully guaranteed.

—**ECONOMIC.** Tubes: Clincher, 24 by 2, 3s. 6d.; 26 by 2, 4s. 9d.; 26 by 2¼, 5s. 3d.; Continental 26 by 2½, 5s. 9d.; 650 by 65, 6s.; 28 by 2½, 7s. 6d.; Bates, 26 by 3, 7s. 6d.

—**ECONOMIC.** Wood-Milne belting, ¾, 1s. 3d.; Continental, ¾, 1s.; patches, solution, gaiters and plugs in stock.

—**ECONOMIC.** Pedley belting, ¾, 1s. 3d.; ¾, 1s. 6d.; ¾, 1s. 8d.; 1 in., 1s. 11d.; 1½, 2s. 4d., 15 per cent allowance for old belts.

—**ECONOMIC.** Retreading and repairs. Economic Tyre Co., 137a Lewisham High Rd., New Cross. Phone, New Cross 1393. 360-e842

—7s. 6d. ALLOWANCE guaranteed for old tyre towards nearly all new motorcycle covers. Particulars to Taylor's, Ltd., Tyre Stockists, Store St., London, W.C. zzz-21

—**MOTORCYCLE** and car tyres, reduced prices. Dunlops, Michelins, Avon, etc.; lists ready. Graham, Vine St., Birmingham. zzz-661

—**TYRES.** See Bancroftian advertisement under "Miscellaneous." zzz-8

—**TWO** 650 by 65 Dunlop covers, heavy rubber-studded, quite new and perfect, accept 1 guinea each. Wayside, Shipton, Oxford. 360-a431

—**KEMPSHALL** tyres for cars and motorcycles, delivery from stock, trade supplied. Depot for Kempshall tyres, 200 Deansgate, Manchester. 363-468

—**BASTONE'S.** Presents free, a 3s. repair outfit to purchasers of Henley, Peter Union and Michelin clearance covers, as below:—

—**BASTONE'S.** Michelin heavy Trident wired-edge covers, 26 by 2½, for F.N.s, 19s., list price 30s.; 26 by 2¼, 18s., list price 28s.

—**BASTONE'S.** Michelin heavy Trident, beaded edge, 26 by 2, 19s., list 26s. 6d.; 26 by 2¼, 21s., list 28s. 6d.; 26 by 2½, 23s., list 31s.

—**BASTONE'S.** Michelin heavy Trident, beaded edge, 28 by 2½, fit 28 by 3 rim, 20s. each.

—**BASTONE'S.** Henley rubber-studded covers, 26 by 2, 14s., list price 30s.; 26 by 2¼, 18s., list 33s.

—**BASTONE'S.** Michelin standard Semella steel-studded, 26 by 2, 22s. 6d., list 37s. 6d.

—**BASTONE'S.** Peter Union twin-ribbed heavy covers, 26 by 2, 19s. 6d., list 29s. 3d.; 26 by 2½, 26s. 6d., list 34s. 3d.

—**BASTONE'S.** See under "Miscellaneous" for further bargains in covers, tubes, etc.

—**BASTONE'S.** Guaranteed red tubes, 26 by 2, 4s. 6d.; 26 by 2¼, 4s. 9d.; 26 by 2½, 6s.; 26 by 3, 7s. 6d.

—**BASTONE'S.** Michelin and Palmer 1916 covers and tubes in stock, wired and beaded. 228 Pentonville Rd., King's Cross, London, N. Close 6.30, Saturday 1 o'clock. 360-469

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—**LESSONS** given in sidocar driving and mechanism; ladies and gentlemen. 41 Ashford Rd., Cricklewood. 360-b175

—**RIDER TROWARD** specializes in tuition. Full course 25s. inclusive. 78 High St., Hampstead. Phone, 5392. 360-467

Try a new medium
for disposing of your
old Motorcycle—

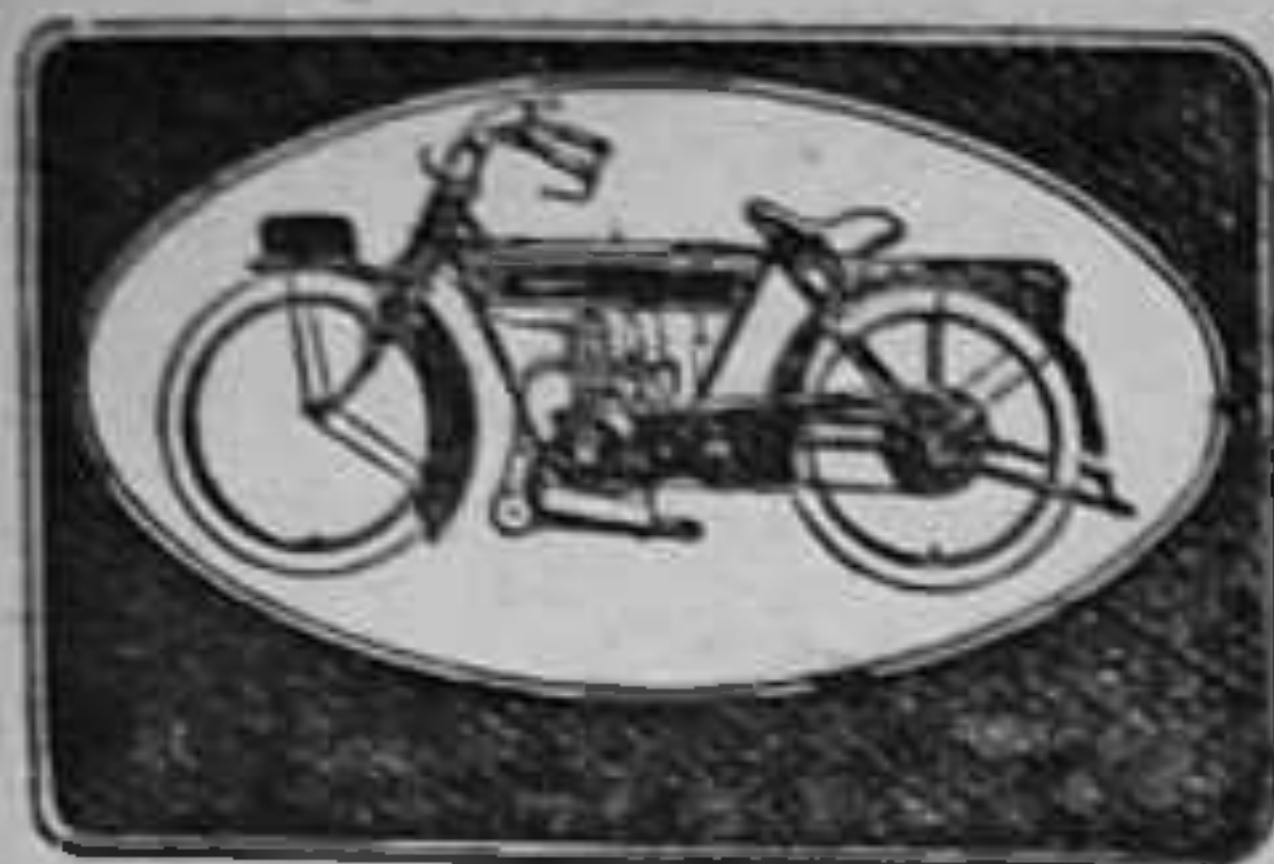
MotorCycling

1—"Motor Cycling" is the only journal that reaches the cyclist, linked as it is with "Cycling," the only cycling paper. A Motor-cyclist must be a cyclist first.

2-The small advts. in "Motor Cycling" are set in clear type, and an announcement is thus easily found.

3—"Motor Cycling" is the only journal the readers of which are all motor-cyclists, or those contemplating the purchase of a motor-bicycle. If you have a second-hand motor-bicycle, you do not want to advertise in a cyclecar paper or a motor paper—therefore, advertise in one which is read by motor-cyclists only, and does not deal with cyclecar topics as well—viz:—

"MOTOR CYCLING."



VELOCETTE.

Dutch Results.

June 1st. Reliability Trial ... 1st PRIZE.
July 9th. Race at Amersfoort ... 1st PRIZE.
Beating all Competitors.

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Put it in the Mart—

That old motor-bicycle—
that sidecar—that magneto
—anything—see first page
of "Motor Cycling Mart."

—if you want
to sell it..

LOMAX SIDECAR APRONS.

Storm Pattern No. T111,
9/6 Post free.
With detachable cap to
cover hose when
used without
passenger
1/- ex.



No. T111, as shown. Made from best stout Waterproof
Khaki Hood cloth. Size 52 in. long over all, 15 in. wide at
top, 21 in. wide at bottom. Fasteners are supplied loose,
so it can be fitted to almost any car. Can be used as half
apron if required. Special aprons made to paper pat-
terns. Any Agent can supply, or from—

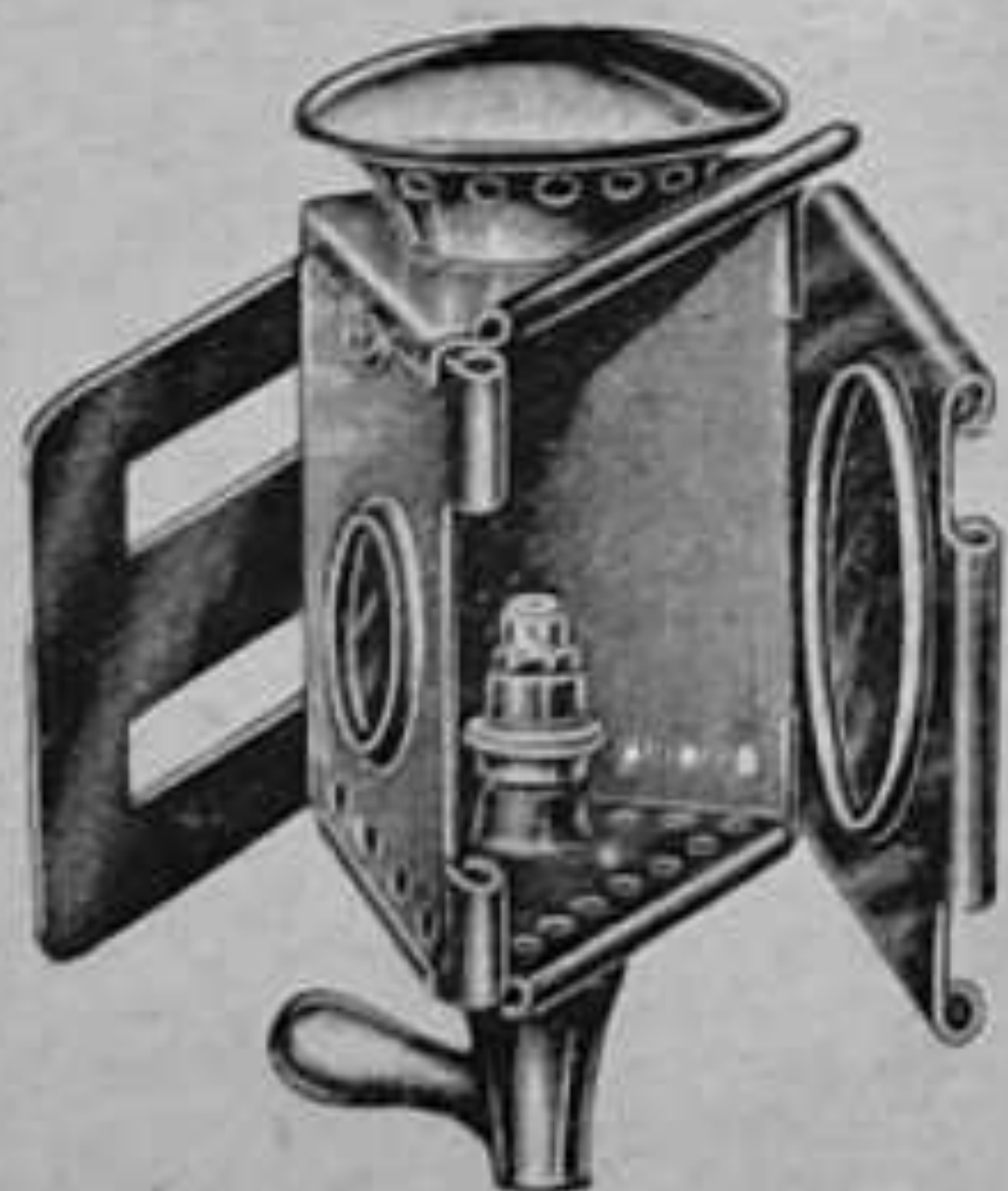
LOMAX LIMITED, Resilient Works,
William Street, BIRMINGHAM.

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"THE MOTOR"

EVERY TUESDAY. ONE PENNY
7-15, Rosebery Avenue, London, E.C.

F.R.S. LAMPS



Tail Lamps ... 4/- and 5/6
Gas Lamp Sets ... 40/- to 78/6

F.R.S. LAMPS, "Castle" Works,
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BIRMINGHAM.

WANTED.

—SECOND-HAND motorcycles purchased for
spot cash, send particulars and lowest prices. Ser-
vice Co., 292 High Holborn, W.C. zzz-854

—WANTED, motorcycles, spot cash. Wands-
worth Motor Exchange, Ebner St. (Wandsworth
Town Station). 373-d342

—WANTED, Douglas motorcycle, must be cheap
for cash, with 2-speed, cash waiting. Box No. 8910,
c/o "Motor Cycling." 364-399

—DOUGLAS, any model, wanted for cash. 164
Elm Pk. Mansions, Park Walk, S.W. zzz-770

—GEO. SMITH'S, of 268 Lavender Hill, Clapham
Junction, are buyers of motorcycles, combinations,
sidecars, speedometers, lamps, etc., for cash;
write, bring or send; good prices paid. Phone.
Battersea 1271. zzz-526

—WANTED, pair complete Triumph forks. S.
41 Ash Rd., Stratford. 360-a455

—DOUGLAS motorcycle wanted (preferred), out
of order, damaged, or smashed, ready cash waiting.
Box No. 8912, c/o "Motor Cycling." 364-393

—MOTORCYCLE or combination, not later than
1913, wanted, damaged, smashed or out of order
preferred. Box No. 8915, c/o "Motor Cycling." 364-394

—LIGHTWEIGHT motorcycle wanted, 2½ or
2½hp, 2-speed J.A.P. engine, or 2-stroke, must be
cheap for cash. Box No. 8917, c/o "Motor
Cycling." 364-395

—WANTED, cheap for cash, a good 1913 or 1914
combination or cyclecar, no dealers. Cyril Bright,
18b Morat St., Clapham. 360-b133

—WANTED, Douglas or other good lightweight,
no dealers. 436 Whitehorse Rd., Thornton Heath.
360-b123

—MOTORCYCLE, good make, speed gear, 1913-14,
good condition, cash bargain. Write, D. S., 112
Erskine Hill, Hendon. 360-b111

—WANTED, 5hp Indian, speeds, exchange 3½ 2-
speed Premier. Caedeger Hall, Seven Sisters.
360-b105

—WANTED, back cylinder for 6hp Peugeot en-
gine. Bone, Hinton, Twyford, Berks. 360-b95

—MOTORCYCLE, with or without sidecar, cheap.
Boxall, 40 Peabody Estate, Fulham. 360-b94

—2-SPEED gear to fit engine shaft, Millennium
preferred. Robinson, Sandy, Bedfordshire. 360-b72

—WANTED, Triumph back wheel, 1914, free en-
gine model. George Long, Whitechurch, Hants.
360-b62

—WANTED, timing wheels for a 4hp Kelecom
engine, 36 teeth on each wheel, 67½ ins. in circum-
ference approximately. Apply, 711 Garratt Lane,
Lower Tooting, London. 360-b55

—CYLINDER and piston wanted for 1913 Enfield.
5-6hp. Bunting, Harrow. 360-b52

—MONEY. Money. Money. If you want money
for your motorcycle combination or car, come at
once, it's waiting. Wandsworth Motor Exchange,
Ebner St., Wandsworth (Town Station). 360-c839

—DOUGLAS, 1915-16, wanted. Freeman, Ran-
more, Park Rd., Kingston-on-Thames. 360-b157

—WANTED, speed gear for Bradbury, must be in
good condition and cheap, N.S.U. preferred.
Wright, Lower Shore, Gravesend. 360-b158

—DO not sell your motorcycle or combination
until you get our prices. We offer. Percy and Co.,
337 Euston Rd., London. 360-401

—WANTED, horn, 1 in. belt, drip feed, toolbag,
rear lamp, for cash, or exchange Pomeroy.
Glanaraeth, Bridge St., Port Talbot. 360-b177

—WANTED immediately for spot cash all types
of bikes and combinations. Longman Bros., King
St., Acton. 360-459

—WANTED, a Douglas motorcycle, not earlier
than 1914, 2½, price not over £35, must be in top
condition. Central Motor Hiring Co., Ltd. 330
Kennington Rd., London, S.E. 360-445

—CYLINDER, Norton, also low, light frame,
etc. Northcott, Camden St., Plymouth. 360-b186

—100 MOTORCYCLES wanted, spot cash prices,
bring or send. Palmer's Garage, Tooting. 360-466

NOTICE.

OWING to postal delays and irregularities, it
is advisable to post advertisements early on
Tuesdays so as to ensure, as far as possible, that
they reach us by the FIRST POST on Wednesdays.

Lately several advertisements have been received
too late for inclusion, although despatched on
Tuesdays.

INSIST ON A PEDLEY BELT

A DEPOSIT DEAL

Kingston-on-Thames.

The Manager,
"Motor Cycling."

Dear Sir,—

"I am in receipt of
your letter enclosing cheque
£38 in settlement of account
re ——— and Levis
motorcycle on approval.
I must confess I fully
appreciate the value of the
medium of your *deposit*
system through which the
sale of my Levis was
effected.

Please accept my best
thanks for your courtesy in
the matter, also for your
prompt cheque in settlement

Yours faithfully,
A. E."

"MOTOR CYCLING" DEPOSIT SYSTEM.

Advertisers desiring to have replies
sent care of "MOTOR CYCLING"
may do so on payment of a nominal fee
of 6d.

DEPOSIT SYSTEM.—The intending
buyer forwards to our office the amount of
the purchase money, which will be acknow-
ledged to both parties. Notes or Money
Order save time. Money Orders should be
made payable at the Money Order office, at
114, Farringdon Road, E.C., and drawn in
favour of Temple Press Ltd. Cheques must
be made payable to Temple Press Ltd., and
are acknowledged to seller when "cleared."
If a sale is concluded, we forward to the
seller the amount agreed upon. If no sale
is made, we return the amount deposited.
In either case we deduct a commission of
1½% (3d. in the £, minimum 1/-) on the
amount deposited, to cover our expenses
of booking, postage, etc. Carriage is to be
paid by the buyer. If the article is re-
turned, each party pays one way. The risk
of damage in transit is the seller's. Articles
on approval are not to be retained more
than three days, unless by arrangement
between the parties. All disputes to be
settled by the arbitration of the Editor of
"MOTOR CYCLING."

BRITISH and BEST BRITISH!



Cheap, yet GOOD. Guaranteed 5,000 miles 6d.
The cheapest Belt Fastener in the world.
THE "STANLEY" SPARE LINK saves time, trouble and money. Saves the cost of a new belt. Fits any hook fastener 1s.
THE "STANLEY" SHIELD protects the belt fastener, prevents wear of the pulley, and conserves power. Specially designed for use with the Philipson Pulley 8d.
"STANLEY" FASTENER, The Original... 9d.
Stanley Adjusting Links 6d. for 3
Stanley Belting, 1/3 to 2/5 per ft. plus 10%
Pamphlet sent on receipt of a p.c.

**STANLEY MOTOR BELT
AND FASTENER CO.**

Inventors of the Original Hook
Fastener

Bromley, KENT

—SEND your motorcycle to Palmer's Garage, Tooting, Wimbledon Station, L. and S.W. Railway, per goods, or Tooting Junction passenger train; cash offer will be telegraphed immediately on receipt of machine; machine can be included in fortnightly auction without charge if offer not accepted; reserve price may be fixed. Sole address: Palmer's Garage and Motor Auction Rooms, 193, 185, 187, 189 High St., Tooting. 360-467

—WE are cash buyers for reputed makes of motorcycles, comprehensive range of both new and second-hand motorcycles always in stock. Exchange deals and deferred payments entertained. Write your requirements to William Betts, Ltd., Motorcycle Dept., 95, Upper Richmond Rd., Putney, S.W. 360-506

—RIDER TROWARD wants several high-class motorcycles and light cars for sale on commission, 5 per cent., inclusive of all charges, collected free. 79 High St., Hampstead. Phone 5392. 360-477

WINDSCREENS.

—WINDSCREENS and hoods, Taylor's patent, from 19s. 6d.; hoods, 35s. Write for illustrated list. Trade supplied. Beware of infringements. Windscreen and Hood Co., Scrafton Rd., Ilford. 361-a375

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Reading Standard Motorcycle Co.,
28-29, Baker St., Portman Square, LONDON, W.
Telephone: 508 & 503 Mylar.
The "ROLLS-ROYCE" of MOTORCYCLES

GRANDEX MOTORS

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to New Works.

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TRADE, PLEASE NOTE.

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OR PISTOL.

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MotorCycling

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will supply ANY MAKE of
MOTORCYCLE

For **£5 to £10** Cash down
(according to the value of the machine),
THE BALANCE IN 12 MONTHLY PAYMENTS.

(2% only added for 12 months' credit)

Largest and best assorted stock of machines,
which include:—

**James, Harley-Davidsons,
Enfields, Calthorpes, Allons,
Royal Rubys, Levis, New
Imperials, Ixions, Etc., etc.**

Packed Free and Carriage Paid to any address in U.K.

West End Agents for the famous JAMES MOTORCYCLES.

Sole London Agents for the IXION MOTORCYCLES.

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Does your shirt fade?
Does your collar fit
worse every time it
comes back from the
laundry?

Does your shirt come
back from the laundry
uncomfortably small?

If so, Remember

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ALL-BRITISH

FLANNEL SHIRTS

GUARANTEED UNSHRINKABLE

Prices 4/11 to 12/6

**COLOURED COTTON
SHIRTS**

GUARANTEED FADELESS

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EVERYWHERE.

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THE PROVIDENT CLERKS' AND GENERAL GUARANTEE
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ESTABLISHED 1865.

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OF CLAIMS.

15 per cent. REDUCTION
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H.P.	PREMIUMS FOR PRIVATE USE ONLY. VALUE OF MOTORCYCLE and <u>SIDECAR</u> .	
	Not Exceeding £50	Exceeding £50
Under 3½	£2 7 6	£2 10 0
3½	2 10 0	2 15 0
4½	2 15 0	3 0 0
5—6	3 0 0	3 10 0
7—9	3 17 6	4 7 6

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West End Office:—

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Motor Cycling

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No. 8.—As above, but rounded-studded tread and slightly heavier casing.

Note the stout 2-ply casing and overlapping bead flaps.

Type.	For Machines	1½"	2"	2½"	2¾"	2½" to 3" 2½"	3"
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Three-ribbed *	“Big” Models	—	—	—	—	—	48/4
Tricar	Up to 5-6 h.p.	—	—	38/6	41/3	44/0	49/6
Stonehenge	Up to 4 h.p.	—	22/9	24/9	26/9	29/6	31/4
Druid	Up to 2½ h.p.	17/4	19/3	21/2	—	—	—
Lightweight 3-rib	2-strokes, etc.	12/0	14/7	16/9	—	—	—
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* For high-powered machines with motor rims. Also made 650 x 65 at 40/0 and 43/8.
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